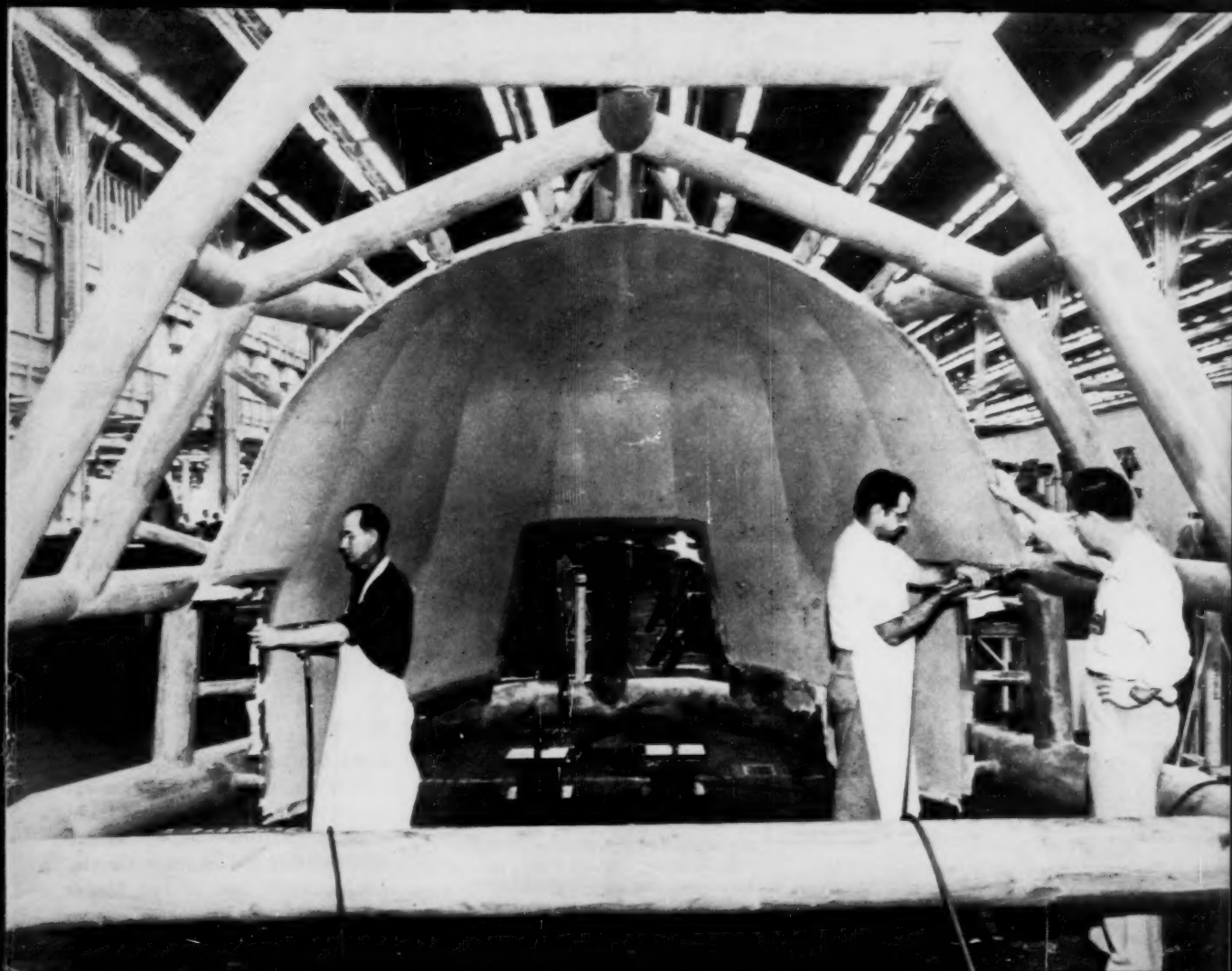


THE MAGAZINE OF

Standards



New records set in
INTERNATIONAL WORK ON PLASTICS (Page 10)

JANUARY 1957



January, 1957

Volume 28, No. 1

In Two Parts—Part 1

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Marginal Notes

Cylindrical Fits—

Craig Telfer offers his article "How B4.1 Can Help You" (page 5) as a contribution to the understanding that he believes is needed before companies such as his own adopt the nomenclature of American Standard B4.1-1955. He says: "Other articles I have seen on American Standard B4.1-1955 have consisted mainly of classifications such as this: 'H-5. Only produced by precision boring or lapping with the finest workmanship.' That approach ignores the simplifications inherent in the symbols themselves. If a hole can be specified as '.375 Dia. H6,' for example, perhaps tools and gages can be ordered by the same designation, and will come marked with it, ready for use by the people who read the drawing. That could simplify manufacturing and inspection procedures considerably."

Plastics—

Importance of the work being done by international technical committees on plastics is emphasized by reports from the Society of the Plastics Industry, Inc, that plastics production passed the four billion pound figure in 1956. This was an increase of 10 percent over 1955 production, which showed a 30 percent increase over the previous year. Only ten years ago production was less than one billion pounds. SPI estimates that production for 1957 will be approximately 5 percent higher. The largest percentage increase in 1956 production for plastic raw materials was in polyethylene, 541,128,000 pounds, up 30 percent; polyesters 71,800,000 pounds, up 30 percent, and vinylenes, 729,500,000 up 10 percent.

Gene Dauber, Photographer—

Many comments have been received about the photographs taken at the Seventh National Conference on Standards and shown in the December 1956 issue of THE MAGAZINE OF STANDARDS. As those who attended the Conference know, the pictures were taken with natural light, without disturbing the meet-

ings with a flash. What we omitted to tell our readers in the December issue is that the photographer is Gene Dauber, New York City. Mr Dauber has covered a number of conferences and international meetings for ASA. He says that he finds use of natural light gives more natural and more interesting photographic results. He strives to give the effect of action and to avoid the more usual line-up of meeting groups.

The Front Cover—

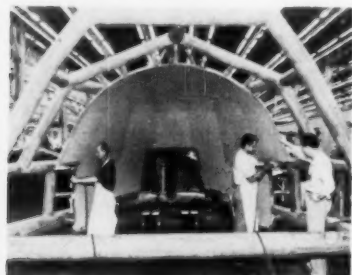


Photo Bakelite Company

Probably the largest plastic tool ever made is this master gage used for checking the alignment of the whole upper front window area of the Hercules C-130, first U.S. turboprop transport to reach production. The entire 95 feet of the Hercules' fuselage is pressurized, requiring tight and accurate fitting of the fuselage sections. The shell of this huge gage is an epoxy-glass laminate. The frame of normalized steel is 18 feet wide by 14 feet deep by 9 feet high.

Lockheed Aircraft Corporation, Georgia Division, is using plastic trim jigs, checking fixtures, and other tools for about 10,000 of the nearly 50,000 parts it estimates are needed for making the new transport (not counting nuts, bolts, and rivets). These plastic tools are glass-reinforced laminates made with liquid compounds based on Bakelite epoxy resins.

Progress in developing international recommendations on terminology, methods of test, and specifications to bring about better understanding among countries using and producing plastics is reported by the USA delegation to meetings of the International Organization for Standardization (page 10).



This Month's Standards Personality

FRANK G. KAUFMAN, member of ASA's Company Member Conference and of Sectional Committee B18 on Threaded Fasteners, has just been given an unusual and newly created top-management assignment. As Director of Plant Improvement for the Standard Pressed Steel Company, Mr Kaufman has responsibility for a long-range program recently set up by the company to improve its plants and facilities on both the East and West Coasts of the United States and also in England. Mr Kaufman was given the assignment because of his record as vice-president in charge of product engineering for the Cleveland Cap Screw Company, a subsidiary of Standard Pressed Steel.

On a small scale Mr Kaufman has been doing for Cleveland Cap Screw what Standard Pressed Steel now wants him to do for the entire SPS organization. He has been supervising construction and machine selection for Cleveland Cap Screw's \$5,000,000 showplace plant now nearing completion in Cleveland. He expects to spend most of his time as Director of Plant Improvement for the entire SPS organization, but he also will continue to serve as vice-president of Cleveland Cap Screw. He will report directly to H. Thomas Hallowell, Jr, president of Standard Pressed Steel and recently re-elected president of the American Standards Association. Mr Hallowell explains, "We must make additional production facilities available to put on the market new and improved products already developed in the company's expanding research program." And, he says, "Mr Kaufman is extremely well suited for this position because of the unusual combination of his abilities and experience. He is not only a graduate engineer but has had many years of practical manufacturing experience. He has long had top-level management responsibilities and is well recognized in the industry as an authority on fasteners."

Mr Kaufman got his start in the bolt business by working, while still in high school, at a nut and bolt plant where his father was employed. This was an exceptionally good start, since it was Frank Kaufman's father who developed the single-extrusion and double-extrusion processes, and invented the progressive header, a cold-forging machine in which these processes were applied for the first time. This machine was the forerunner of the modern Boltmaker.

Frank Kaufman started work with Cleveland Cap Screw Company in 1936 as a production engineer after experience with the National Carbon Company and as plant manager for the River Smelting and Refining Company, Cleveland. He has been the company's top technical executive on a new 1¼ inch Boltmaker, the world's largest cold-forging machine, in addition to serving as product engineering vice-president and supervising construction of the Cleveland Company's new plant.

Mr Kaufman has been a member of ASA Sectional Committee B18 on Threaded Fasteners since 1947, and is chairman of the Technical Committee of the U. S. Cap Screw Bureau.

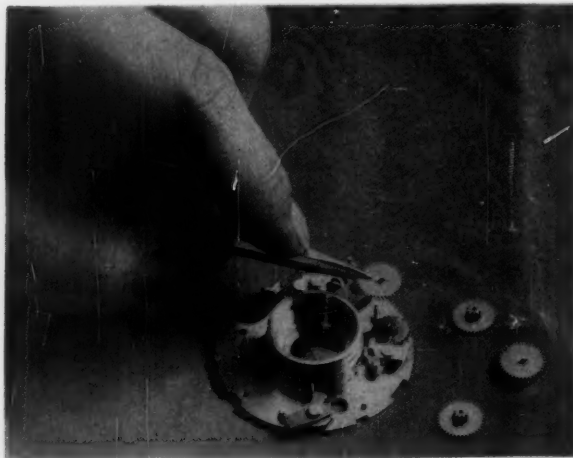
The Kaufmans have two daughters, Barbara, 21, a senior at Cornell University, and Carol, 11.



A. Devaney, Inc., N. Y.

Measuring diameter of shaft being turned on 30-inch lathe. American Standard B4.1 recommends clearances and tolerances for various classes of five types of fits between holes and shafts from 0.04 inch to 200 inches.

Part of shutter assembly for new Kodak Signet 40 Camera, below, uses parts much smaller than those at right, but all must fit to close tolerances and be made economically.



Parts being assembled below are for Brownie Movie Projector. Relatively low cost of producing parts that fit accurately is reflected in product's performance.



How B4.1 Can Help You

by Craig Telfer

Mr. Telfer is Standard Engineer,
Apparatus and Optical Division,
Eastman Kodak Company.

THIS is about the specifying of fits between cylindrical holes and shafts. (To keep the discussion simple, holes and shafts are referred to as "round" from here on.) Designing round parts so they can be made to fit together may be called a universal problem in engineering. Someone has had to work out some kind of fit between a round hole and a round shaft in almost every device where one part moves with respect

to another. Many "solid" fastening problems also raise this problem of fit. Yet most companies have not adopted any simple, clear way of calculating the dimensional requirements, or even of stating them.

Let us consider the way we specify a pair of mating screw threads. We say, for example, "6—32 NC—2B," and we have said a great many things. We do not even need to know all the things we have said. The people

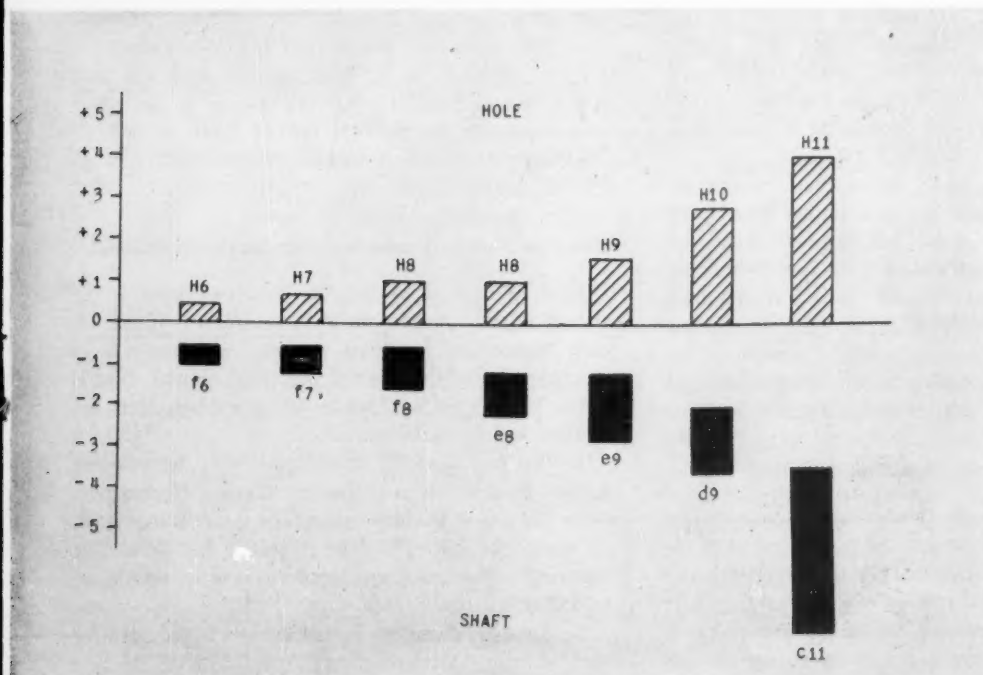


Chart for Visualizing
the Fits Described
(0.500 in. diameter)

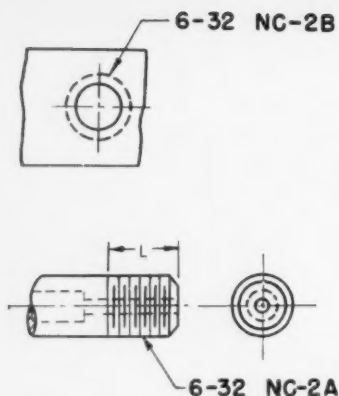
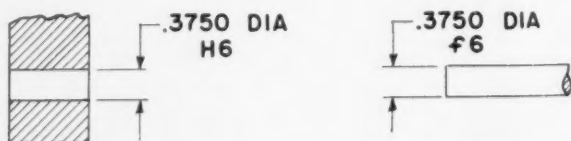


FIGURE 1. How standard symbols are used on a drawing to specify threads on mating pieces.



Unit = 0.001 in.

THE HOLE SPECIFICATION THE SHAFT SPECIFICATION

FIGURE 2. How to specify an RC3 fit between hole and shaft.

who will make threaded pieces will know, or can find out. They can look up the details in a table somewhere. People who will inspect the pieces can also look up our specification. The various published tables agree. Everyone has agreed to accept one definition of the meaning of "6-32 NC-2B," (and of the other standard thread symbols). On a drawing, the threads on mating pieces are specified as shown in Figure 1.

If we wish, we can simplify our calculations and our descriptions of cylindrical fits in a similar way. Basis for this simplification could be the new American Standard Preferred Limits and Fits for Cylindrical Parts, B4.1-1955. This recently published standard consists of a series of preferred basic sizes; a preferred series for tolerances and allowances; a system of 13 tolerance grades; and 5 tables of recommended fits, as well as appropriate explanatory material and definitions.

Specifying Fits by the New American Standard

To establish a fit, by the new American Standard or in any other way, we must first know the kind of fit we want. That is, we must determine the minimum and maximum clearances we can allow between the shaft and the hole. For example: we may decide that a $\frac{3}{8}$ -in. shaft-hole combination will be strong enough

and rigid enough for an application involving a running fit; that a minimum clearance of 0.0005 will permit adequate lubrication; and that the shaft may "shake" too much if the maximum clearance is over 0.0015 in. Now look at Table 1.

At the left is a column marked "size ranges." The third range down is 0.240—0.400 in.; that includes 0.375, and so it is the one we want. Reading horizontally, the first set of clearances we come to is 0.5 (0.0005 in.) minimum, 1.3 (0.0013 in.) maximum. If we decide that a shaft-hole combination with those clearances will do what we intend, and that we do not want a looser fit, we can look at the top of the column for the designations. We find that we have chosen an RC3 fit (Running Clearance, #3 precision). An RC3 fit means that the hole is H6 and the shaft f6. On the part drawings, all we need to say is shown in Figure 2.

What Limits Have We Specified for the Hole By Saying "H6"?

The capital or upper case letter tells us this is a hole specification; the fact that it is "H" and not "G" or "J" tells us the size we are specifying is the lower limit of size of the hole; the "6" fixes the amount of tolerance (always plus). Thus, (from Table 2), "0.3750 H6" is equivalent to "0.3750 + 0.0004."

What Limits Have We Specified for the Shaft By Saying "f6"?

The meaning of this expression is a little more involved than that of the hole specification, because an allowance (minimum clearance) is a part of the expression "f6". To find the limits of size, subtract the amounts in Table 3 from the size we have specified. Thus, the maximum size of our 0.3750 f6 shaft = $0.3750 - 0.0005$, or 0.3745; and the minimum size of the shaft = $0.3750 - 0.0009$, or 0.3741. You may wish to restate the 0.3745, 0.3741 limits as $0.3745 - 0.0004$, if you like to think of it that way; or as 0.3743 ± 0.0002 , etc.

How Can This Be Useful in a Company's Operations?

Now let us look at a larger problem: what is the aim of all this? What can be accomplished if a company decides to change its way of specifying a fit in accordance with the method described above? That is a little hard to see, and harder yet to explain. Here are some thoughts on the subject.

1. The first obvious advantage is that the designer is freed from time-consuming calculations. He just puts down the size he decides on, and the symbols that stand for the fit he wants, and he has done his work. The checking and calculating operations have all been done in advance.

2. Another advantage is that a basis is provided for standardizing tools and gages. Any 0.375 in. H6 hole

TABLE 1—Fits: Designations and Clearances

Fit Designation:	RC3	RC4	LC6	RC6	LC7	LC8	LC9	
Hole Designation:	H6	H7	H8	H8	H9	H10	H11	
Shaft Designation:	f6	f7	f8	e8	e9	d9	c11	
Size Ranges (in inches) Over Thru	Minimum and Maximum Clearance, in units of 0.001 in.							
0.040	0.120	0.3 0.8	0.3 1.1	0.3 1.5	0.6 1.8	0.6 2.6	1.0 3.6	2.5 7.5
0.120	0.240	0.4 1.0	0.4 1.4	0.4 1.8	0.8 2.2	0.8 3.2	1.2 4.2	2.8 8.8
0.240	0.400	0.5 1.3	0.5 1.7	0.5 2.3	1.0 2.8	1.0 3.8	1.6 5.2	3.0 10.0
0.400	0.710	0.6 1.4	0.6 2.0	0.6 2.6	1.2 3.2	1.2 4.4	2.0 6.4	3.5 11.5
0.710	1.190	0.8 1.8	0.8 2.4	0.8 3.2	1.6 4.0	1.6 5.6	2.5 8.0	4.5 14.5

TABLE 2. Hole Tolerances (from basic)

SIZE RANGES (in inches) Over Thru		Tolerances are in units of 0.001 in.					
		H6	H7	H8	H9	H10	H11
0.040	0.120	+0.2	+0.4	+0.6	+1.0	+1.6	+2.5
0.120	0.240	+0.3	+0.5	+0.7	+1.2	+1.8	+3.0
0.240	0.400	+0.4	+0.6	+0.9	+1.4	+2.2	+3.5
0.400	0.710	+0.4	+0.7	+1.0	+1.6	+2.8	+4.0
0.710	1.190	+0.5	+0.8	+1.2	+2.0	+3.5	+5.0

(Values are rounded off to four places, per American Standard Z25.1-1940)

TABLE 3. Shafts: Limits of Size (from basic)

SIZE RANGES (in inches) Over Thru		Tolerances are in units of 0.001 in.						
		f6	f7	f8	e8	d9	e9	c11
0.040	0.120	-0.3 -0.5	-0.3 -0.7	-0.3 -0.9	-0.6 -1.2	-1.0 -2.0	-0.6 -1.6	-2.5 -5.0
0.120	0.240	-0.4 -0.7	-0.4 -0.9	-0.4 -1.1	-0.8 -1.5	-1.2 -2.4	-0.8 -2.0	-2.8 -5.8
0.240	0.400	-0.5 -0.9	-0.5 -1.1	-0.5 -1.4	-1.0 -1.9	-1.6 -3.0	-1.0 -2.4	-3.0 -6.5
0.400	0.710	-0.6 -1.0	-0.6 -1.3	-0.6 -1.6	-1.2 -2.2	-2.0 -3.6	-1.2 -2.8	-3.5 -7.5
0.710	1.190	-0.8 -1.3	-0.8 -1.6	-0.8 -2.0	-1.6 -2.8	-2.5 -4.5	-1.6 -3.6	-4.5 -9.5

(Values are rounded off to four places, per American Standard Z25.1-1940)

will require tools and gages of the same sizes and types; there is no chance that a slight change of the nominal size or the tolerance will require something different. Thus, to promote uniformity of tools and gages, all we need to do is to organize what we know about the functions of cylindrical fits in our products, decide which symbols best express the various tolerances and allowances, and see that those symbols are used for the functions we have studied.

3. Another advantage that is not easy to see is that it should be possible to make our various products work more uniformly. If the moving parts in Model X products have been made to the specifications given for corresponding parts of Model Y products, the job of making the two models perform similarly might be simplified. Or, if product X is a high-priced device that must have superlative performance, analysis to determine what elements of performance might be improved by better fits could be made with greatly reduced effort; that is to say, with less probability that excessive costs might be introduced by oversights or because of a heavy burden of detail.

Obviously, this new mode of expression cannot be used without changing production arrangements somewhat. A parallel can be found in the way threaded parts are specified and made. The threads are specified by symbols that include among their meanings all necessary allowances and tolerances; "1/4-20 UNC-2B" says a great many things. To produce round holes and shafts on the same basis of understanding, it would be necessary to train everyone concerned in the meaning of the symbols. Would the training be difficult? To answer that, ask yourself if you have found this discussion difficult; or better yet, try it on some other people to see if they get the idea. People in Europe have gotten the idea; German drawings received here have carried these symbols for fits, and the symbols mean the same amounts of clearance and tolerance as those given in the tables.

For example: 12.7 mm = 0.500 in.

By German fit tables, a 12.7 mm f6 shaft has limits of
12.684 mm
12.673 mm

Converted to inches and rounded off, these are

0.4994 in.

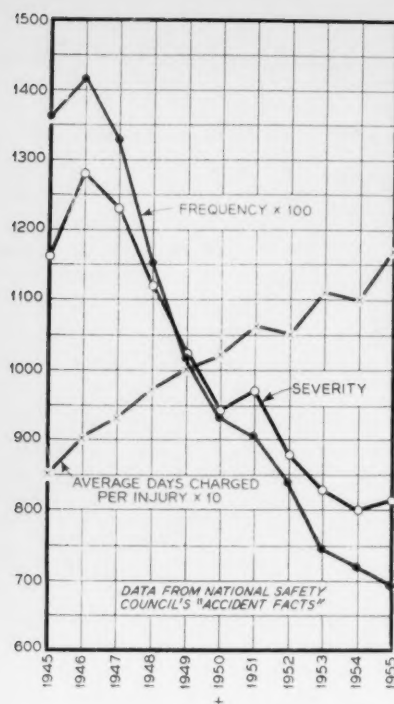
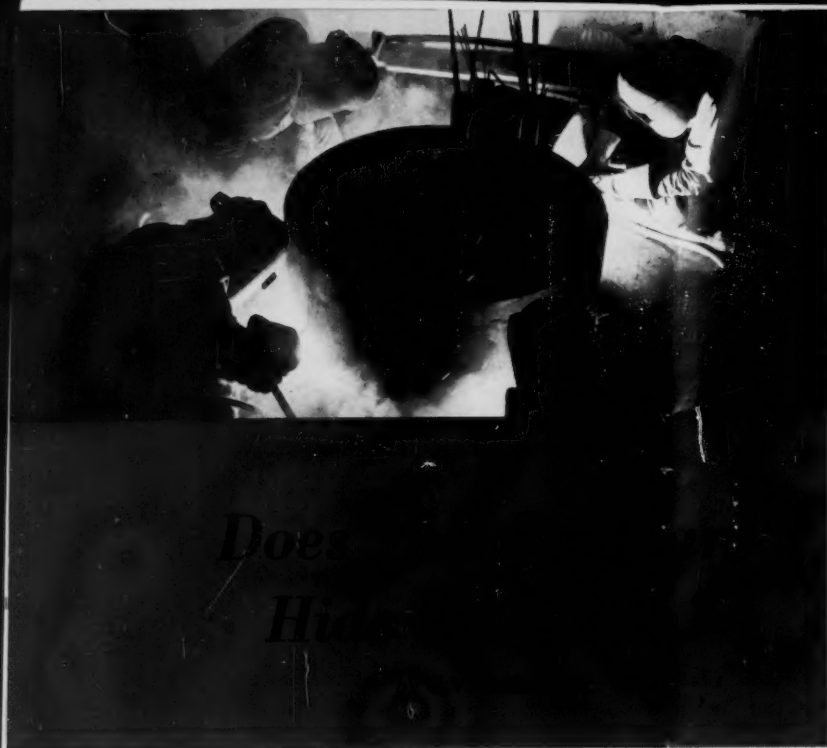
0.4990 in.

By American Standard B4.1-1955, a 0.5000 in. f6 shaft has limits of

0.4994 in.

0.4990 in.

Thus, in making the shaft here from a German drawing, only the nominal size must be converted to inches; the "f6" has the same meaning in both languages. The system is therefore useful for specifying fits precisely, not only in a company's own factory, but nationally and internationally as well. But, like any great invention, its usefulness can be seen by most people only after they have used it or seen it used. Try it on a particular problem or group of problems, and see what it can do for you!



NINETY-NINE PERCENT of the American Standard Method of Recording and Measuring Work Injury Experience, Z16.1-1954, provides most admirably for fulfilling its stated purpose "to measure work injury experience." However, National Safety Council statistics seem to indicate that section 1.2.4 of the standard has nullified the objective of measurements made under the provisions of the standard.

As those concerned with industrial safety know, injuries that result in what are defined as "temporary total disabilities" account for a vast majority of the injuries that contribute to the disabling injury frequency rate. Section 1.2.4 defines a "temporary total disability." According to this definition, a temporary total disability is "any injury which does not result in death or permanent impairment, but which renders the injured person unable to perform a regularly established job *which is open and available to him . . .*" That last italicized phrase has made the balance of the standard ineffective in measuring work injury experience.

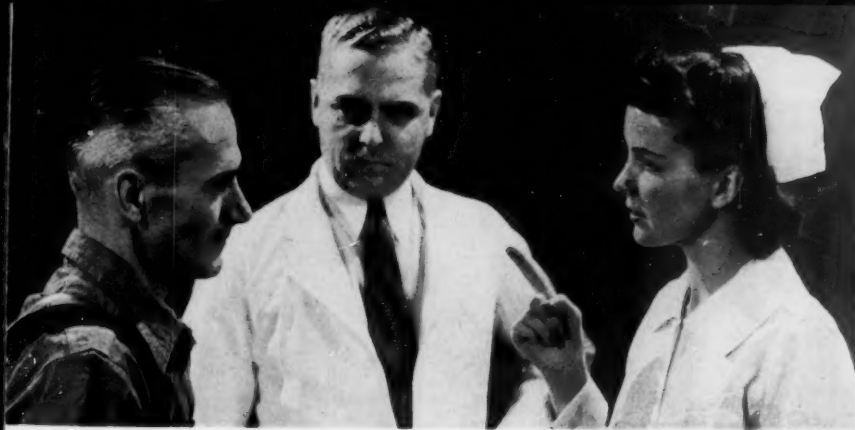
Mr Culbertson is assistant to Edward B. Landry, Safety Director, Office of the Postmaster General, Washington, D.C., and member of ASA Sectional Committee Z2 on the Safety Code for the Protection of Heads, Eyes, and Respiratory Organs of Industrial Workers.

Surely injury experience means the incidence of injuries, the number that actually occurred. Presumably the first responsibility of the safety engineer is to reduce the actual occurrence of injuries. While safety departments are just as concerned as the next department over employee welfare, the resolution of hardship cases, transfers, and reassignments made for the benefit of the employee usually falls to the lot of some other segment of management.

Probably one of the greatest by-product contributions of the safety movement has been the continuous pressure on management in behalf of the injured employee to keep him on the job and keep his pay check intact. This history runs back to employment of the one-armed night watchman in the days of common law defenses. Whether these initial efforts were motivated by a guilty conscience or a sincere desire to help the injured is now unimportant. It is important, however, that the safety profession shall not inadvertently rob itself of one of its most useful tools of appraisal.

The disabling injury frequency rate should measure the total number of disabling injuries experienced, not merely the ones that management could not accommodate with a less skillful job. This so-called "light-work" accommodation distorts the actual incidence of injuries that disabled the employee from his job.

Why should these injuries be counted in the frequency rate when the employee is kept on a job?



Industry invests in accident prevention; cashes in with safety. High on its investment list are first aid departments; protective equipment according to American Safety Standards (examples here—protective clothing for welders, safety goggles, safe controls for printing presses); and American Standard methods of recording injuries and compiling statistics. Chart (left) shows trends in disabling injury frequency and severity, and average days charged per injury — data from National Safety Council's "Accident Facts."



1. Why should the large plant with a variety of jobs experience an arm fracture without any effect on its frequency rate, when the small plant across the street suffering the same injury must tally a disabling injury? It might have been the same type of accident. The safeguard inadequacies may have been identical. Should not their frequency rates *both* reflect this?

2. Do we not also want to pin-point these injuries for analysis and prevention of recurrence? The time spent by safety engineers studying nondisabling cases is generally but a fraction of that spent analyzing disabling injuries.

3. The cost of such an injury, including transfer, accommodation, and substitution, is certainly over and above that of a "first-aid" case.

4. Generally when an employee is injured to the extent that he cannot continue in his job, it is something more than a "minor" injury.

Perhaps some of the statistics which tell us that small plants are much more hazardous than large plants, or that the cost of disabling injuries (per recorded disabling injury) is going up just because everything else is going up, etc, should be reexamined.

Where do the National Safety Council statistics initially referred to fit into this? Let's look at the accompanying graph, constructed from the Council's 1945-1955 "Accident Facts" figures.

For the organizations reporting to the Council, the disabling injury severity and frequency rates have been steadily falling, from 1160 and 13.6 in 1945 to 815

and 6.96 in 1955. But look at the average-days-charged-per-injury trend. It has steadily climbed from 85 to 117 over the same period.

We find it difficult to convince ourselves that this is all the fault of automation. And our face becomes even redder when we realize that this trend flatly contradicts one of the basic obligations of the safety engineer—to *eliminate the serious hazards first*. Surely we direct our initial attention toward potential death and amputation hazards! The ancient history of elevator codes, boiler and pressure vessel codes, etc, supports this fundamental. Accordingly, the average number of days charged per injury should be declining as we eliminate the more serious hazards. And it probably is, but because so many one- and two- and three-day cases are "accommodated," the record does not bear this out. According to the statistics, we have been eliminating the lesser hazards first.

The defined purpose of the standard would be attained by a simple change in 1.2.4 to, "... which renders the injured person unable to perform *his regular job* ..." Section 1.7 which defines a "regularly established job" would no longer be needed.

The alternative would be to change the introduction of the standard to clarify the purpose as being that of measuring disability not only by the experience and nature of the injury, but also in terms of the ability of the plant to accommodate the injured employee.



Ninety delegates from 15 nations attended ISO TC 61 meeting, September 1956.

New Records set in **International Work on Plastics**

by C.H. Adams and G.M. Kline

TECHNICAL COMMITTEE 61 on Plastics of the International Organization for Standardization set new records for attendance and accomplishments at The Hague meeting during the week of September 17-22, 1956. Approximately 90 delegates from 15 nations acted on 23 draft ISO proposals and draft ISO recommendations during the six-day meeting. Hungary, Poland, Rumania, and the USSR were represented for the first time.

Dr G.M. Kline, chief of the Division of Organic and Fibrous Materials at the National Bureau of Standards, presided as meeting chairman. Ir D.J. van Wijk, Consultant of the Testing and Analyzing Department, Plastics Research Institute, TNO, Delft, was co-chairman. C.L. Condit of the Society of the Plastics Industry served as secretary, assisted by N.A. Skow, Synthane Corporation, of the U.S. delegation and J. Smit of the Hoofdc commissie voor de Normalisatie in Nederland. E.W. Westenberg of HCNN was in charge of general organization of facilities and services.

Mr Adams, Monsanto Chemical Company, was leader of the USA delegation to the meeting of Technical Committee 61, Plastics, at The Hague, September 17-22, 1956. Dr Kline, chief of the Division of Organic and Fibrous Materials, National Bureau of Standards, served as chairman of the meeting. The American Standards Association, USA member of the International Organization for Standardization, holds the secretariat and is responsible for administration of the work of this international committee.

The sessions were highlighted by several significant developments. One of the most important of these was agreement that the primary purpose of ISO/TC 61 is to develop test methods for commercial use. A corollary to this is that test methods will be based on existing national standards. A direct result of this policy clarification was the adoption of draft ISO proposals for impact testing based on U.S. (ASTM) and German (DIN) standards. Related to the policy understanding was the adoption of three alternate standard test atmospheres, one of which reflects U.S. practice in the plastics field. It was also indicated that the development of ISO test methods would be of direct interest to scientific investigations and the compilation of engineering data.

A milestone in TC 61 history was passed when five methods already approved by all ISO member bodies were given a final check for submission to the ISO Council for approval as ISO recommendations. These methods cover the determination of (1) Temperature of deflection under load (heat distortion), (2) Water absorption, (3) Apparent density of molding powders which can be poured from a funnel, (4) Apparent density of molding powders which cannot be poured from a funnel, and (5) Acetone soluble matter of phenolic moldings.

Future Meeting Plans

The U.S. invitation to hold the 1958 meeting in America was accepted. Plans are already under way for this to immediately precede or follow the fall meet-

ing of ASTM Committee D-20. A symposium on plastics testing in which the foreign delegates will be invited to participate will be scheduled during the week of the D-20 sessions. A.C. Webber of the American Group is program chairman for the symposium.

The 1957 meeting will be held in Switzerland probably in July preceding or following the Congress of the International Union of Pure and Applied Chemistry.

Working Group Activity

A comprehensive list of equivalent terms relating to plastics in English, French, German, Italian, and Spanish was completed by the Working Group on Nomenclature and Definitions. This list of terms, with the addition of the Russian equivalents and unofficial definitions of some of the terms, will be circulated to ISO member bodies as a draft ISO recommendation. The group will now undertake the preparation of official definitions of the terms.

The Working Group on Mechanical Strength Properties, in addition to preparing the two Draft ISO Proposals on Impact Testing, approved a test method for flexural properties of rigid plastics as a draft ISO recommendation.

The Working Group on Standard Laboratory Atmospheres and Conditioning Procedures recommended that the ISO Technical Committee on Atmospheric Conditioning endeavor to obtain agreement on one standard atmosphere for all materials. In the meantime, as already mentioned, two draft ISO proposals have been revised to include three alternate sets of conditions, namely:

	Atm A	Atm B (Essentially: ASTM D 618)	Atm C
Relative humidity	65 ± 5%	50 ± 5%	65 ± 5%
Temperature	20 ± 2 C.	23 ± 2 C.	27 ± 2 C.

The Working Group on Thermal Properties prepared two draft ISO proposals, for the determination of (1) melt flow index of polyethylene and polyethylene compounds, and (2) incandescence resistance of plastics. One of the methods to be given final approval as an ISO Recommendation, i.e. temperature of deflection under load, originated with this group.

The balance of the methods to be submitted to the ISO Council came from the Working Group on Physical-Chemical Properties. This Group has been the most productive in development of methods in TC 61. It currently has four circulating as draft ISO recommendations, namely: (1) Boiling water absorption of plastics, (2) Methanol soluble matter of polystyrene, (3) Free phenols in phenol-formaldehyde moldings, and (4) Free ammonia and ammonium compounds in phenol-formaldehyde moldings. At The Hague meeting, it approved the circulation of the following as Draft ISO recommendations: (1) Determination of bulk factor of molding materials, (2) Detection of free ammonia in phenol-formaldehyde moldings, (3) Deter-

mination of styrene in polystyrene with Wijs solution, and (4) Determination of viscosity number of polyvinyl chloride resins in solution.

The Working Group on Ageing, Chemical and Environmental Resistance prepared three new draft ISO proposals covering the determination of the thermal stability of polyvinyl chloride and related copolymers and their compounds by (1) Congo red method, and (2) Discoloration method, and a method for determining bleeding of colorants from plastics. They also approved three methods for circulation as draft ISO recommendations: (1) Change in weight and dimensions of plastics after contact with chemical substances; (2) Loss of plasticizers from plastics; and (3) Migration of plasticizers from plastics.

Progress is being made by the Working Group on Preparation of Test Specimens. Preliminary drafts were considered by the Group as follows: (1) Recommended practice for injection molding test specimens of thermoplastic materials; (2) Recommended practice for compression molding test specimens of thermoplastic materials; and (3) Recommended practice for compression molding test specimens of thermosetting materials. These will probably be ready for circulation as draft ISO proposals in 1957.

The Working Group on Electrical Properties reviewed documents received from the International Electrotechnical Commission, Technical Committee 15. These included: (1) Method of test for volume and surface resistivity of electrical insulating materials, and (2) Method of test for determining the conventional tracking voltage of solid insulating materials under moist conditions.

Administrative Developments

Ing F.M. Jacobs of The Netherlands assumed the leadership of Working Group 5 on Physical-Chemical Properties, and Dr Lal C. Verman of India that of Working Group 3 on Conditioning.

American Delegation

The USA delegation to The Hague was well qualified in the technology of plastics standardization. Represented in this group were government, trade, society, and industry, as follows:

C.H. Adams, Monsanto Chemical Company, leader
W.E. Brown, Dow Chemical Company
R. Burns, Materials Advisory Board, National Academy of Sciences
C.L. Condit, Society of the Plastics Industry
G.M. Kline, National Bureau of Standards
M.C. Reed, Bakelite Company
N.A. Skow, Synthane Corporation, representing the Society of Plastics Engineers, Inc
A.C. Webber, E.I. du Pont de Nemours and Company, Inc
P.E. Willard, Ohio-Apex Division, Food Machinery and Chemical Corporation
E.Y. Wolford, Koppers Company, Inc



J. H. Foote



W. A. Kitts, 3rd



D. Roy Shoults



Harold Turner



John E. Dube

FIVE new members and two re-elected members of the American Standards Association's Board of Directors took office January 1, 1957. Nominated by Member-Bodies of ASA chosen by the Board of Directors itself, the new Board members were proposed for election by the Aircraft Industries Association, the American Institute of Electrical Engineers, the Atomic Industrial Forum, Inc, the Electric Light and Power Group, and the Air-Conditioning and Refrigeration Institute. Re-elected for second three-year terms, M. C. Harrison, president, Harrison Construction Company, again took office as member-at-large; and Gilbert L. Kerr, vice-president, American Fore Insurance Group, as a nominee of the Association of Casualty and Surety Companies.

The new members are:

J. H. Foote, president, Commonwealth Associates, Inc—nominated by the American Institute of Electrical Engineers

Vice Admiral W. A. Kitts, 3rd, USN (Ret), manager, Atomic Products Study, General Electric Company—nominated by the Atomic Industrial Forum, Inc

D. Roy Shoults, general manager, Aircraft Nuclear Propulsion Department, Atomic Products Division, General Electric Company—nominated by the Aircraft Industries Association

Harold Turner, executive vice-president in charge of operations, American Gas and Electric Service Corporation — nominated by the Electric Light and Power Group.

John E. Dube, president, Alco Valve

Company—nominated by the Air-Conditioning and Refrigeration Institute to complete the unexpired term of W. H. Aubrey. His term expires in December, 1957.

J. H. Foote—

Mr Foote has been president and chief engineer of Commonwealth Associates of Jackson, Michigan, and vice-president of Commonwealth Services, Inc, of New York, since 1949. He is a graduate of Michigan State University in engineering. Before 1949 he worked professionally in engineering and construction work for the Commonwealth & Southern Corporation and predecessor organizations particularly in the design of generating plants and of electric transmission and distribution systems.

He is a Fellow and at present is vice-president of districts of the American Institute of Electrical Engineers and has been chairman of the AIEE Coordinating Committee on Insulation Coordination. He is now chairman of the Administrative Committee on Standards of the American Society for Testing Materials, and is a member of the Association of Edison Illuminating Company's Committee on Switchgear and the Joint Committee on Power Circuit Breakers.

Mr Foote has an impressive record in the American Standards Association. In addition to membership on the Standards Council, Committee on Procedure, Electrical Standards Board, and Materials and Testing Standards Board, he has worked on both national and international

standards committees, particularly in connection with power circuit breakers. He has been active in the work of International Electrotechnical Commission Technical Committees 17 on circuit breakers and 28 on insulation coordination.

Among his many professional activities is membership on the International Conference on Large High-Tension Systems. He is at present chairman of the committee on salaries and fees of the Michigan Society of Professional Engineers, and is a past president of the Michigan Engineering Society.

Vice Admiral W. A. Kitts, 3rd, USN (Ret)—

Admiral Kitts is manager of the Atomic Products Study of the General Electric Company's Atomic Products Division. Before his retirement from the Navy, during nearly 40 years of Naval service, he served as a line officer and as an ordnance specialist, filling combat assignments in both world wars. During that time he had more than 15 years of shore duty involving ordnance engineering, inspection, and manufacture. After his retirement he was manager of ordnance engineering for General Electric until he was named manager of the Industrial Atomic Products Study in 1954. Admiral Kitts holds the Navy Cross, the Legion of Merit with two gold stars, China's Order of Cloud and Banner, in addition to a number of campaign medals. He is also an Honorary Commander of the Order of the British Empire.

He was elected president of the Capital Cities Post, American Ordnance Association in May, 1953.



D. Roy Shoults—

Mr. Shoults has been general manager of the Aircraft Nuclear Propulsion Department, Atomic Products Division, General Electric Corporation, since 1953. Starting with General Electric, Schenectady, as a test engineer in 1925, he became vice-president of engineering at Bell Aircraft Corporation, Niagara Falls, in 1945. From 1947 to 1950 he was vice-president of engineering at the Glenn L. Martin Company, Baltimore, becoming director of engineering ARO, Inc, in 1950. He became manager of the General Electric Aircraft Nuclear Propulsion Project of USAAF and AEC in 1951. At General H. H. Arnold's direction in 1941 he acted with a Board investigating the "Whittle" jet engine project and recommended the initial U.S. program for test development. After that he was responsible for directing coordination between GE and aircraft manufacturers in building the first jet airplanes.

Mr Shoults is a Fellow of the American Institute of Electrical Engineers, and of the Institute of Aeronautical Sciences. He was vice-president of aircraft activities of the Society of Automotive Engineers in 1952. He received the Charles A. Coffin award for original work in connection with synchronous motor pull in characteristics (with S. B. Crary and A. H. Lauder) in 1937; and received the AIEE best paper prize, for "Industrial Application of Amplidyne Generators" (with M. A. Edwards and F. E. Crever). He is also co-author of "Electric Motors in Industry," 1941.

Harold Turner—

Mr Turner, executive vice-president-operations, American Gas and Electric Service Corporation, New York, is a veteran of 32 years' experience in the electric power field.

He joined the American Gas and Electric Company as an engineer in 1926 and served as an engineer and executive in the engineering department until 1941. During that time he was assistant to the chief of electrical engineering, assistant to the chief engineer, and assistant to the vice-president and chief engineer.

In 1941 he was named assistant general manager of the Ohio Power Company, one of the six AGE operating subsidiaries. Five years later he was elected vice-president and general manager. He returned to New York as executive vice-president in charge of operations for the AGE Service Corporation in 1954.

Mr Turner was a founder (and first president) of the Ohio Electric Utility Institute. He is a director of the AGE Service Corporation, and director and vice-president of the six AGE operating subsidiaries. He is also a director of the Edison Electric Institute, and a member of the American Institute of Electrical Engineers.

John E. Dube—

Mr Dube, president of the Alco Valve Company of St Louis, Missouri, manufacturers of automatic control devices, is a past president of the Refrigeration Equipment Manufacturers Association, one of the predecessors of the Air Conditioning and Refrigeration Institute. He is a member of the Advisory Board of the Institute, and a member of the Council of the American Society of Refrigerating Engineers. A registered professional engineer in the State of Missouri, he is a member of the American Society of Heating and Air Conditioning Engineers and of the Society of Automotive Engineers. Active in community work, he is director of the Young Men's Christian Association of St Louis and St Louis County; a

director of the St Louis County Chamber of Commerce; and of the St Louis Community School of Music; and president of the Board of Trustees of the John Burroughs School, St Louis County.

M.C. Harrison—

Mr Harrison became vice-president of the Harrison Construction Company when it was organized in 1928 with his father as president. He became president in 1947. He is also president of the Tennessee Concrete and Supply Company of Knoxville, Tennessee. He is a director of the Associated General Contractors of America, a past president and a director of the Constructors Association of Western Pennsylvania, and a member of the Moles. Outside his business activities, he is chairman of the Board of the Pittsburgh Opera Company. "There is only one change in my biography since 1953," he says. "Our daughter Evelyn is now Mrs A.F. Milledge."

Fabian Bachrach



M. C. Harrison

G. L. Kerr

Gilbert L. Kerr—

Mr Kerr has been with the America Fore Insurance Group since 1932. He was appointed secretary of The Fidelity and Casualty Company of New York, a member of the Group, in 1941, and secretary of all companies in the Group in 1946. In 1948 he was made vice-president of all the companies.

Mr Kerr is a director of the Federal Grand Jury Association. In July, 1956, he was elected chairman of the board of the National Automobile Underwriters Association.

BOOKS.....

Chemical Process Industries. *Second edition.* R. Norris Shreve. McGraw-Hill Series in Chemical Engineering. McGraw-Hill Publishing Company, 330 W. 42 Street, New York 36, N. Y. 1004 pp. \$11.50.

Here are the modern methods used in the manufacture of chemicals and chemical products, broken down into unit processes and operations by flow sheets. Data on chemical and physical changes and reactions, economic statistics and costs, energy and power required, are covered. The book also covers the manufacture of chemicals themselves, and includes full description of many manufacturing industries based on important chemical changes, such as the making of plastics, synthetic fibers, ceramics, paints, explosives, and pesticides.

Many new illustrations and tables have been added in the second edition.

Engineering Structural Failures. Rolt Hammond. First edition 1956. Philosophical Library, Inc, 15 East 40 Street, New York 16, N. Y. 224 pp. \$12.00.

This book surveys the causes and the results of structural failures in a variety of examples, including earthworks, dams, harbor works, buildings, bridges, and tunnels. The author also considers special problems of failure due to vibration, to earthquake and subsidence, and in welded structures of steel or light alloys. Modern methods of testing materials, ranging from x-ray and electronic developments to the recently completed de Havilland aircraft pressure-test tank, are reviewed.

FBI Register of British Manufacturers—1957. 29th edition. Published November 1956 for the Federation of British Industries by Kelly's Directories Limited and Iliffe and Sons Limited, Dorset House, Stamford Street, London, S.E. 1, England. 9½ x 7½. 1124 pp. Bound full cloth. 42 s. Od. (post free).

This guide lists products and services of more than 7,000 British firms under more than 5,400 alphabetical headings. It contains a Classified Buyers' Guide, as well as seven other sections giving addresses of companies, and information about trade associations, brands, trade

names, and trade marks. It also includes French, German, and Spanish glossaries translating product terms used.

The Operation, Explosion, and Inspection of Pressure Vessels. September 1956. Oregon Bureau of Labor, State Office Building, Salem, Oregon. 29 pp.

A description and explanation in everyday language of the objects inspected by the Boiler Inspection Division of the Oregon State Bureau of Labor, and why and how they are inspected. The booklet covers boilers and unfired pressure vessels and liquid petroleum gas. Included is a section on safety standards and the ASME Boiler Code.

Manufacturers' Symbols and Designations for Anti-Friction Bearings, Supply and Logistics Handbook. Standardization H203. Superseding AF Manual 67-5. 18 July 1956. Office of the Assistant Secretary of Defense (Supply and Logistics), Washington 25, D. C.

This handbook was developed by the Department of the Navy, Bureau of Supplies and Accounts, to serve as a guide for the uniform interpretation by the military of commercial designations and symbols used by manufacturers of anti-friction bearings. It is an omnibus of the identification codes of 47 bearing manufacturers.

The custodians for the Handbook are the Army, Ordnance Corps; Navy, Bureau of Supplies and Accounts; and the Air Force.

Dimensions and Tolerances for Mass Production. Earle Buckingham. First edition. 1954. 8½ x 11. 164 pp. The Industrial Press, New York 13, N. Y. 8½ x 11. 164 pp. \$8.00.

The former secretary of Sectional Committee B1 on Standardization and Unification of Screw Threads, B1, and vice-chairman of Sectional Committee B6 on Standardization of Gears, had one major purpose in writing this book. This was, he explains, "to create a wider interest in the subject in the hope that it will stir up discussion about what needs to be done and what improved methods can be developed to meet these needs."

As he says, his service on many standardization committees "made it apparent that after agreement on the specific details of some standard was reached, the matter of how the dimensions and tolerances were to be expressed often seemed to raise more contention than did the subject matter itself." This book is an effort to present his present understanding of the subject and the reasons for every suggestion he makes.

Parts of the book appeared originally as an extensive series of articles in *Machinery*. In book form they are amplified and present a more complete picture of the problem of dimensioning with tolerances because of the detailed examples that are included.

The book includes chapters on (1) Need for an adequate system of dimensioning with tolerances; (2) Production design; (3) Dimensions and tolerances for the detail drawing; (4) Tolerances on conditions of size; (5) Tolerances on conditions of form — profiles; (6) Tolerances on conditions of form — tapers and angles; (7) Tolerances on conditions of position; (8) Specification by means of functional gages; (9) Specifying surface finish; (10) Production design of 3-jaw chuck; (11) Production design of a ¾-inch globe valve; (12) Summary. An Appendix provides definitions of terms and definitions relating specifically to drawings, geometry, size, tolerances, limits and fits, and gages.

ASTM Standards on Engine Anti-Freezes. 1956. American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. 6 x 9. 52 pp. Heavy paper cover. \$1.50.

This compilation of all ASTM methods of test pertaining to engine anti-freezes contains 11 standards—9 test methods and 2 specifications. An Appendix also gives notes on the significance and interpretation of the glassware corrosion test. The standards were prepared by ASTM Committee D-15 on Engine Anti-Freezes.

NATIONAL STANDARDS IN A MODERN ECONOMY

Dickson Reck, Editor

Published by Harper and Bros, New York, \$5.00

Review by

Admiral Ben Moreell, CEC, USN (Ret)

*Chairman of the Board,
Jones & Laughlin Steel Corporation*

During the past half-century so much has been said and written by socialist-communist enthusiasts and their sympathizers in support of the thesis that all of human life can be molded and shaped to conform to pre-determined, more or less uniform, standard patterns that there is, among many people, a tendency toward automatic revulsion against anything which carries the tag "standardization." Many people who are concerned about the current rapid advance of regimentation in the political and economic spheres of our social structure recoil from the idea of "standardization" in any field. There is a vague and ill-defined fear that "standardization" constitutes a threat to individualism and an encouragement to the ultimate development of a society similar to that of the ants and the bees.

It is, therefore, of most important timeliness that this volume has been made available to the public. For it comprises the up-to-the-minute thinking of those who are best qualified to discuss the current status of and the future needs for industrial standardization. The discussions serve to demonstrate that, far from contributing to the current movement toward political and economic regimentation, industrial standardization has made significant contributions to that release of human energies which is essential to increased productivity and to stimulate the

growth of individual initiative and reward. In addition, it is significant that most of the articles point to the great potential contributions which can be made in these areas by proper stimulation and expansion of industrial standardization.

This compilation of treatises by thirty-four outstanding specialists in their fields constitutes a work of encyclopedic scope in the field of standardization. Its great import is to point out clearly how this activity, unfortunately too often ignored or given scant consideration by those who should know better, can render great service to humanity, especially in this age of accelerating development of automatic production processes.

Certainly, we cannot dispute the statements of certain critics of standardization who complain that it does not "produce," nor does it "sell." But I am sure that those who are interested in production and selling will agree, after they have perused this volume, or at least those parts of it which have particular applicability to their own activities, that standardization can be an *invaluable aid to production and sales* and, in this way, render a service of transcendent value to the advancement of civilization.

While the range of subjects covered by the treatises is unusually wide, the total effect is a verification

of the opening statement in the preface, as follows:

"The partnership between science and standards holds the secret to the extraordinary dynamism and productivity of modern industrial technology. This partnership begins at the laboratory door; it pervades all processes of production; it comes to rest only when the goods are used up in the hands of the ultimate consumer."

Of especial interest to this reader were the two articles on standards in the Federal Supply System by Willis S. MacLeod (civilian goods) and C.R. Watts (military goods). My experience of thirty years in government service and my service with the first and second Hoover Commissions have served to emphasize for me the importance to our whole economy of these discussions which point the way to huge potential economies in our governmental operations.

Even a cursory examination of the book leads to the conclusion that it is not only of great potential value to those of us who have the responsibility for administering large industrial operations, but it will be rewarding reading for all thoughtful persons who are interested in the progress of our social structure. In my opinion, no modern industry can afford to overlook the value of this rich store of information in their long-range planning as well as in their day-to-day operations.

WHAT IS YOUR QUESTION?

What does Note 4, Table 1A, of American Standard C50.1-1955, mean and how does it apply to the temperature rise limit of Class B field windings of salient pole generators, frequency changers, synchronous condensers, and low speed motors?

Table 1A of the American Standard on Synchronous Generators, Synchronous Motors, and Synchronous Machines in General, C50.1-1955, gives 80 degrees as the temperature rise limit for Class B insulation of field windings for air-cooled synchronous machines, which include those mentioned in the question. It is present industry practice, however, to design field and armature windings of large machines, excepting synchronous condensers, for 60 C rise, although the committee is of the opinion that in the future it may be possible to design even large machines to the values given in the table. In the meantime, the committee felt that the 80 C value is somewhat high for certain large and high-voltage machines. Note 4 calls attention to the fact that on very large machines or on machines with high variable loads the values given in the table should be reduced somewhat to take care of the various considerations that affect these machines more than others.

Where can we locate British standards for heavy-type lubricating oils?

British Standard 1995-1952 contains the specifications for this type of oil approved by the British Standards Institution. Copies of standards from other countries can be purchased from the American Standards Association.

Are there standard requirements for thickness of masonry walls?

An American Standard, Building Code Requirements for Masonry, A41.1-1953, contains specifications for the thickness of masonry walls recommended for adoption in building codes. This standard, including the Appendix, offers a great deal of helpful information on masonry construction.

Is the American Standard on Noise Measurement, Z24.2-1942, still in effect?

No, this American Standard was withdrawn recently because the Z24 sectional committee considered it to be obsolete and misleading in certain respects. The definitions and reference values it contained have been superseded by those now in the American Standard Acoustical Terminology, Z24.1-1951. Recent research in the United States and in England also indicates need for re-

vision of the loudness contours formerly incorporated in Z24.2-1942. At present, there is no indication as to when a new edition of the standard may be available.

When is the plumbing industry going to standardize on one size of faucet washer for domestic use? There seem to be about 100 different sizes to choose from in the hardware store. Even a specific size, such as $\frac{3}{8}$ in., does not mean anything, since the hardware store wants to know whether it is $\frac{3}{8}$ in. large, medium, or small.

This same question was asked in a round table on standardization of bathroom fixtures held under the auspices of *House and Home*, in collaboration with the American Standards Association and the Research Institute of the National Association of Home Builders. "It is encouraging news that some manufacturers have at last standardized on a single washer for all their fittings and have at last developed interchangeable spindles that will work in any bath, lavatory, or kitchen sink fitting of their own make," the round table report declares. But, it comments, "We can see no reason, however, why this kind of standardization cannot be made industry-wide instead of just company-wide."



At presentation of awards, SES meeting, New York, December 11—Paul J. Smith, ASTM Standards Editor; R.C. Sogge, newly elected SES Fellow; Madhu S. Gokhale, president of SES; W.L. Healy, past-president, SES and chairman of Awards Committee; Dr Jules Labarthe, Mellon Institute.

The first presentation of two annual awards given by the American Society for Testing Materials was made by the Standards Engineers Society posthumously to Dickson Reck, editor of the new book, *National Standards in a Modern Economy*. The awards are for outstanding service to standardization and to standardization literature. The citation calls attention to Mr Reck's work as Consulting Fellow at the Mellon Institute of Industrial Research and his accomplishment in visualizing and bringing together the many articles in *National Standards in a Modern Economy*.

The awards were received on behalf of Mrs Reck by Dr Jules Labarthe, Administrator-Fellow of the Commodity Standards Fellowships, Mellon Institute of Industrial Research.

Mr Reck prepared the book as a memorial to Dr Paul G. Agnew, secretary of the American Standards Association from 1918 until his retirement in 1948.

FROM OTHER COUNTRIES

001 SCIENCE IN GENERAL

United Kingdom (BSI)

Terminology of internal defects in castings as revealed by radiography
BS 2737-1956

003.62 SIGNS, NOTATIONS, SYMBOLS

Germany (DNA)

Specimen of Greek alphabet
DIN 1453, Bl.2

Spain (IRATRA)

Method of writing letter symbols
UNE 5030

017/019 CATALOGS

India (ISI)

Rules for making abstracts IS 795-1956

534 ACOUSTICS

Germany (DNA)

Logarithmic paper for plotting vibration diagrams
DIN 45408

United Kingdom (BSI)

Recommendations for field and laboratory measurement of airborne and impact sound transmission in buildings
BS 2750-1956

535 OPTICS, LIGHT

Germany (DNA)

4 stds for different details of microscope
DIN 58881/3, -85

Portugal (IGPAI)

Photometric units NP - 77

542 EXPERIMENTAL CHEMISTRY

Belgium (IBN)

Volumetric laboratory glassware and connected apparatus
NBN 370

614.8 SAFETY MEASURES

Australia (SAA)

Minimizing of anaesthetic fire and explosion hazards in hospitals
AS CZ.9-1956

Canada (CSA)

Automobile fire fighting apparatus
CSA B89.3-1956

Japan (JISC)

Medical x-ray protective eye-glasses
JIS T 8303

Industrial safety signs
JIS Z 9103

Safety color code
Z 9101-53*

Poland (PKN)

Foam extinguishers PN M-51051-55

USSR

2 stds for life belts and life rings
GOST 2147/8-54

616.314 DENTISTRY, ODONTOLOGY

Australia (SAA)

Dental modelling compound
A S No.T.6-1956

621.3 ELECTRICAL ENGINEERING

Argentina (IRAM)

6 volt storage batteries for automobiles
IRAM 2046/7

Dry capacitors, polarized
IRAM 4019

Bulgaria

H.T. porcelain insulators
BDS 2015-55

Graphical symbols for power distribution diagram
BDS 1748-54

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

Rotating electric machines. Basic standard

BDS 180-55

Scale of nominal D.C. voltages used in

electric rail and railless transport systems

BDS 1957-55

Standard scale of nominal frequencies

BDS 1955-55

Insulated metal conduits

BDS 2005-55

Overhead line stretching blocks

BDS 2087-55

Rotating machinery: method of dimensioning

BDS 2210-55

Electricity meters, induction type

BDS 2279-55

Capacitors, nominal ratings

BDS 2342-56

Standard rating of small motors from

6 to 600 watt, 50 cycles
BDS 2347-56

Canada (CSA)

Spec for asbestos-cement conduit

CSA C128-1956

Construction and test of electric signs

C22.2 No. 2-1956

Construction and test of wire connectors

C22.2 No. 65-1956

Construction and test of specialty transformers

C22.2 No. 66-1956

Construction and test of varnished-cloth-insulated wires and cables

C22.2 No. 78-1956

Germany (DNA)

Switch-diagram for electrical power and transportation installations

DIN 40713, Bl.2

Electric hot plate for 110 to 380 v

DIN 44910, Bl.3/5

Graphical symbols for power and telecommunication installations

DIN 40712

2-pole plug and receptacle for battery operated busses

DIN 43571, Bl. 1 & 2

Rules for preparation of switchgear; diagrams for power and telecommunication

DIN 40719

Aluminum and aluminum-and-steel cables

DIN 48202

Soldering lugs

DIN 46215/6

Binding posts

DIN 46205

Miniature electronic tubes

DIN 41537, Bl. 1

12 stds for different electronic tube bases

DIN 41531/4 Bl.1 and 2, 41537 Bl. 2 & 3, 41539, Bl. 2 & 3

4 stds for miniature transformers

DIN 41303, 41304 Bl. 2 and 3

Soldering terminal strips

DIN 41498

Nine-pole switch

DIN 41554, Bl. 2 & 3

Flexible shaft of electric tools

DIN 42995, 44713

Electric hot plates

DIN 44913, Bl. 2

X-ray tube housing

DIN 6836

Israel (SII)

Electric flat irons

SI 182

Netherlands (HCNN)

List of terms pertaining to power distribution lines

NEN 2118

Rules for fitting up low voltage cables in junction and branching boxes

N 3160

Graphical symbols used in telecommunication

V 2051

Graphical symbols used in power installations

V 2054

Anode batteries, layer built, with manganese dioxide depolarizers

V 3061

621.643 PIPES AND ACCESSORY PARTS

Spain (IRATRA)

Flanges for n.p. 64 and 100 kg/cm²
UNE 19155

625.1/.6 RAILWAYS AND TRAMWAYS

Argentina (IRAM)

Railway signals: symbols
IRAM 7004

Carbon steel axles for cars and tenders

IRAM 7005

Czechoslovakia (CSN)

Wooden sleepers for standard gage railroad

CSN 49 1412

France (AFNOR)

Ballast and gravel nine-tine fork

NF E 78-001

Italy (UNI)

Streetcar steps and handrail
UNI 3649

Cross section of trolley wire
UNI 3650

Turnbuckles for overhead line
UNI 3651

7 stds for tramway rails, fishplates, bolts, etc.
UNI 3648, 3693/9

Poland

Ballast for railroad tracks
PN K-80050

Roumania (CSS)

Speed and grade signs along railroad tracks

STAS 3805, 4864 -55

Double open-end wrenches used in railroad construction

STAS 4898-55

Carbon steel hot rolled rails, type 49

STAS 2953-51

Clearance gage for narrow-gage tracks

STAS 4531-54

631 AGRICULTURE, AGRONOMY

France (AFNOR)

Superphosphates
NF U 42-107

India (ISI)

3 stds for construction of food grain storage structures

IS 606/8

5 stds for construction protection and improvement of structures for food grain storage

IS 600/2 - 1955

IS 609/10-1955

Code for practice for handling food grain in transit

IS 611 - 1955

Netherlands (HCNN)

Recommended terms used in agricultural engineering. N.1.General

V 5101

631.3 AGRICULTURAL TOOLS AND MACHINERY

Japan (JISC)

2 stds for threshers
JIS B 9101/2

2 stds for weeder and power sprayers

JIS B 9103, 9113

Yugoslavia (JUS)

Power take-off shaft of agricultural tractors

JUS M.L.1.601

637.0/.3 DAIRY PRODUCTS, DAIRYING

Ireland (IIRS)

3 stds for determination of fat percentage in milk, buttermilk and cream

IS 66/8 -1955

Determination of fat percentage in cheese

IS 69 -1955

United Kingdom (BSI)

In-can milk coolers
BS 2700:1956

648 CLEANING AND LAUNDRY**Union of South Africa (SABS)**

Cleaners and scouring compounds: soap base SABS 525-L955

651 OFFICE ORGANIZATION AND MANAGEMENT**Belgium (IBN)**

Standard layout of administrative and commercial forms NBN 377

Netherlands (HCNN)

Rules for typing scripts N 1394

655 PRINTING AND PUBLISHING**Belgium (IBN)**

Rules for preparation and manufacturing books NBN 348

India (ISI)

4 stds for preliminary pages, title-leaves, etc. in books IS 790/3-1956
Practice for table of contents IS 794-1956

658 ORGANIZATION OF WORK. BUSINESS ORGANIZATION**France (AFNOR)**

2 stds for technical control of delivery of industrial products NF X 06-011/2

Netherlands (HCNN)

Index figures for industrial injuries N 3047

Spain (IRATRA)

Unified form for report on the efficiency of metal ore mines UNE 22091
Symbols for indicating stage of work UNE 52001

66 CHEMICAL INDUSTRY**United Kingdom (BSI)**

Welded steam-heated jacketed pans for processing industries (excluding catering equipment) BS 2647: 1956

662.75 LIQUID FUELS**Yugoslavia (JUS)**

Gasoline, 74 octane JUS B.H2.222
Fuel oil, special grade JUS B.H2.430
Sampling and testing of liquid fuels JUS B.H8.010

France (AFNOR)

Liquified petroleum gas NF M 41-002

666 GLASS AND CERAMIC INDUSTRY**Belgium (IBN)**

Tiles, cement and marble mosaic NBN 224

Germany (DNA)

Chemical analysis of ceramics: tests for iron and titan contents DIN 51072
Flexion test of ceramic tiles DIN 51090

Portugal (IGPAI)

2 stds for smooth, thin glass plates NP 69/70

667.4/.5 INKS**India (ISI)**

2 stds for waterproof drawing ink, black and colored IS 788/9 -55

Ireland (IIRS)

New ink for rotary presses IS 76:1956

669 METALLURGY**Argentina (IRAM)**

Chemical analysis of aluminum and aluminum alloys IRAM 642
Chemical analysis of copper-nickel and copper-nickel-zinc-alloys IRAM 640

Czechoslovakia (CSN)

12 stds for copper alloys CSN 42 3035, -3044/7, -3053/4, -3063, -3200, -3202

France (AFNOR)

Chemical analysis of zincs:
—determination of lead and cadmium content NF A 06-565
—turbidimetric test for cadmium content NF A 06-566
—colorimetric test for iron content NF A 06-567
—determination of tin content NF A 06-568
—colorimetric test for copper content NF A 06-569
Standard sizes of round wires of non-ferrous metals and alloys NF A 66-181

Chemical analysis of iron ores. Test for volumetric iron content NF A 06-115
Chemical analysis of lead. Preparation of test specimens NF A 06-511

Germany (DNA)

Aluminum and aluminum alloy angle shapes DIN 1771

India (ISI)

Zinc and zinc base alloy ingots for die casting IS 713-1955

Hard drawn steel wire for springs IS 727-1955

Wrought aluminum and aluminum alloys, sheet and strip IS 737-1955

Italy (UNI)

4 stds on corrosion of metals UNI 3666/9

Zinc and zinc alloy scrap UNI 3670

Lead and lead alloy scrap UNI 3671

42 stds for different methods of chemical analysis of metals: UNI 3672/81, 3683/92, 3708/16, 3719/23, 3725/32

681.2 INSTRUMENT MAKING**USSR**

3 stds for pressure gages GOST 7331-55, 2648, 3720-54

Micrometers for measuring microscope reading GOST 7513-55

Interferometer glass plates GOST 1121-54

Barometer, mercury GOST 4863-55

Scale, dial type, table model GOST 7327-55

Standard balance-weights GOST 7328-55

Anemometer, hand type GOST 7193-54

681.8 RECORDING AND REPRODUCTION OF SOUND**France (AFNOR)**

Phonograph records, 78 rpm. Terminology and specifications NF S 32-001
Phonograph records 45 rpm, micro-groove. Terminology and specifications NF S 32-002

Germany (DNA)

Magnetic tape for sound recording DIN 45512, B1.2

USSR

Record players, portable, mechanically operated GOST 7332-55

621.9 MACHINE TOOLS. TOOLS**Japan (JISC)**

Hand taps for metric, Whitworth and unified coarse thread, limits and tolerance of JIS B 0301/3
Ordinary hand taps for metric, Whitworth and unified coarse threads, dimensions JIS B 4430/2

Chuck for portable electric drill JIS B 4634

Sockets for socket wrench JIS B 4636/7

Poland

2 stds for files PN M-64744, -747

Sprocket wheels, method of checking teeth PN M-03050

Taper sleeves and spindles PN M-55040, -081

Roumania (CSS)

3 stds for different files STAS 632, 636/7 -49

3 stds for different reamers STAS 1263, 1265/6 -50

USSR

2 stds for reamers GOST 7722/3-55

Drills with hard alloy tips GOST 3231-55

Mechanical band saws GOST 7833-55

Chain saws for wood GOST 4889-55

Face milling cutters with inserted teeth GOST 3879-55

Single-point cutting tools, high-speed steel tipped GOST 7369-55

Accuracy of tenonning machines GOST 7321-55

Power shears GOST 7355-55

Vibrating screen GOST 7404-55

Spur gear hobbing machine GOST 7640-55

Mechanical power crank-shaft presses, double action GOST 7639-55

Taps GOST 7250-54

Grinding wheels, classification and testing for balance GOST 3060-55

Steel sleeves, 1:10 and 1:7 taper shanks GOST 7343-55

Saw blades for vertical sawmill frames GOST 5524-55

Circular rip saw machines GOST 700-55

Circular bench saw GOST 890-54

7 stds for metal-and-wood-working machines, planes, etc GOST 1105, 7097-54, 7228-54, 7315/6-55, 7353, 7599-55

7 stds for crushing machines and details thereof GOST 7084, 7090/1, 7243-54, 7523/5

5 stds for presses and details thereof GOST 7209, 7257, 7284-54, 6113-54, 7600

3 stds for milling machines, milling cutters and details GOST 13-54, 7337, 7522-55

3 stds for details of stamping machines GOST 7254/5, 7258-54

Yugoslavia (JUS)

Designation of hard metal tools JUS K.A9.020

High-speed plates for lathe cutters JUS K.C1.100, 150/1

5 stds for milling cutters JUS K.D2.025, -045, -131/2, -135

5 stds for different taps, metric JUS K.D6.020, -030/1, -040, -100

5 stds for dies, metric; stocks JUS K.D6.200/1, -300, 310/1

27 stds for different abrasive wheels and stones JUS K.FO, FL, F2, series

7 stds for different vices and clamps JUS series K.G2

NEWS BRIEFS.....

- Federal Standard 83, which outlines the method used by Federal agencies in the evaluation of x-ray tubes from the standpoint of their usefulness in producing clear sharp radiographs, is being considered for approval as American Standard. The standard was submitted to ASA by the General Services Administration, and was recommended for approval by a general conference of groups concerned, held November 5, 1956. On recommendation of the conference, the standard will be edited to conform with the NEMA Standard XR 4-20, Determination of an X-Ray Tube Focal Spot Size.

- The Mechanical Standards Board, in charge of the American Standards Association's work in the mechanical engineering field, has elected its executive committee for 1957. Members are:

L.W. Benoit, Manufacturers Standardization Society of the Valve and Fittings Industry, *Chairman*
 P.L. Houser, Metal Cutting Tool Institute, *Vice-Chairman*
 C.M. Parker, American Iron and Steel Institute
 H.W. Robb, National Electrical Manufacturers Association
 R.S. Sherwood, Air Conditioning and Refrigeration Institute
 G.M. Hargreaves, American Society of Tool Engineers
 L.H. Winkler, American Society for Testing Materials

- Irving E. Moulthrop has retired as member-at-large on the U.S. National Committee of the International Electrotechnical Commission, after serving on the committee continuously from 1931 through 1956. Mr Moulthrop had taken part in organizing the IEC as a delegate to the Electrical Congress at St Louis

in 1904. He also was active in the American Standards Association's over-all program on standards, as a member of the Standards Council in the early 1930's, retiring from the Council in 1936.

In accepting his resignation, R.C. Sogge, president of the USNC, expressed his personal appreciation and that of the members of the Committee for Mr Moulthrop's long and faithful service.

- The new president of the British Standards Institution is Sir Herbert Manzoni, CBE, for the past 21 years Birmingham's City Engineer and Surveyor. He has been largely responsible for the Birmingham Development Plan and many other important projects in Britain's second city.

Sir Herbert was knighted in 1954. For more than 20 years he has been associated with the British Standards Institution, as chairman of its Building Division, a member of its Executive Committee, and recently, as chairman of the General Council.

Sir Herbert Manzoni
BSI's New President



As a member of the Executive Committee of the Modular Society, and as chairman of BSI's first committee on modular co-ordination he has been concerned with the new techniques aimed at increasing efficiency in the building industry.

Sir Herbert is a member of the Council of the Institution of Civil Engineers and is chairman of the Building Research Board of the Department of Scientific and Industrial Research. He is a member of the Town Planning Institution and of the West Midlands Group on Post-War Reconstruction and Planning, and is a Governor of Loughborough Technical College.

- Hotel purchasing agents are being given an opportunity to learn how to use the new L24 American Standards to obtain top value for each of the 100 million dollars they spend annually for textiles. A Hotel Textile Purchasing Course, featuring the new L24 American Standards, is being held January 14 and 15 at the Iowa Center for Continuing Education at the State University of Iowa. The course is sponsored by the Center in cooperation with the American Hotel Association. It recognizes that the original quality of the textiles purchased will determine the final value of the hotel's 100 million dollar annual investment. Test methods will be demonstrated and the purpose of the test in relation to the end use will be stressed.

The 39 L24 American Standards cover all the most important textile products used by hotels. Their development, by representatives of industry, consumers, technical organizations, and many others, using the procedures of the American Standards Association, has been hailed by

many textile authorities as one of the most important advances in the history of the textile industry.

• Information concerning the current-carrying capacities of wires installed in multiple in steel raceways with various percentages of raceway fill has not been sufficiently complete up to the present time to justify including certain proposed installation practices in the National Electrical Code. Recognizing that these installation practices might be considered safe if all the facts were known, the American Iron and Steel Institute has sponsored a fact-finding investigation of steel raceways installed in different types of building construction with different numbers and types of wire. This investigation was carried on as a public service. Results are being made available to the National Electrical Code Committee for study with a view toward possible modification of the Code.

All segments of the electrical industry cooperated in the investigation, through the formation of an Advisory Working Committee. As the program progressed, the committee met with representatives of Underwriters' Laboratories, Inc. and discussed the work completed.

Wire, raceway, and cellular metal floor manufacturers provided the materials necessary for the investigation. A qualified electrical contractor, under the auspices of the National Electrical Contractors Association, worked with the Laboratories' engineers in the conduit pull-in test installations so that they would be comparable to typical installation practice throughout the United States.

A description of the investigation and its results, "Heating and Mechanical Effects of Conductor Installation in Raceways," has been published in the November 1956 issue of *Electrical Engineering*. Authors are M.M. Brandon, Underwriters' Laboratories, Inc., New York; K.S. Geiges and L.M. Kline, Underwriters' Laboratories, Inc., Chicago, Ill.; and F.V. Paradise, formerly with Underwriters' Laboratories, Inc., Chicago, Ill.

INTERNATIONAL NEWS . . .

Subject	Meetings Scheduled		Date of Meetings
	Technical Committee*	Place	
Gas cylinders/Cylinder design	58/SC 3	The Hague	January 15 - 18
Acoustics	43	Paris	29 - Feb. 1
Electro-acoustics	IEC/TC29	Paris	February 4 - 8
Steel	17	London	March 4 - 7
Aromatic hydrocarbons	78	London	19 - 21
Products in asbestos cement	77	Paris	April 9 - 12
Screw threads	1	Lisbon	May 2 - 4

Meetings Planned			
Coordinating committee on atmospheric conditioning for testing	ISO/ATCO	Paris	March or April
Mining	82	Essen	April
Pipes and fittings/Gas list tubes and other steel pipes	5/SC1	The Hague	April 30
Laboratory glassware and related apparatus	48	London	May 6 - 10
Agricultural machines	23	(Portugal)	May 6 - 9
Agricultural tractors	22 T	(Portugal)	May 10 - 13
Electrical installations on ships	IEC/TC 18	(Italy)	May 13 - 18
Welding/Graphical welding symbols	44/SC 7	Paris	May 23 - 25
Welding/Filler materials and electrodes	44/SC 3	Paris	May 27 - 29
Aircraft	20	Paris	May
Pulleys and belts	41	*	May or June

* Unless otherwise indicated, numbers shown are those of ISO Technical Committees "ISO/TC."

IEC ISO

Subject	Technical Committee	Place	Date of Meetings
Building construction/ Modular coordination	59/SC 1	Paris	June 3 - 4
Building construction	59	Paris	June 5-7
Standing Committee for the study of scientific principles of stand- ardization	ISO/STACO	Lisbon	June 24-27
Automobiles (Mechanical and Braking Sections)	22	*	2nd quarter 1957
Documentation/Docu- mentary production	46/SC 1	*	First half of 1957
Terminology (Principles and coordination)	37	Berlin	Second half of June
Preferred numbers	19	Paris	June or July
General Meeting	IEC	Moscow	July 2-12
Rubber	45	Zurich	Sept. 23-28
Limits and fits	3	Berlin	September
Quantities, units, symbols, conversion factors and conversion tables	12	Copenhagen	October
Resinous lumber (sizing, defects)	55	Moscow	November
Manganese ores	65	Moscow	November
Syringes for medical use and needles for injec- tions	84	Paris	November or December
Welding	44	Paris	December 2-7
Raw material for paints, varnishes, and similar products/Ultramarine	35/SC 6	Paris	Autumn 1957
Raw material for paints, varnishes and similar products/ Ochres	35/SC 7	Paris	Autumn 1957

International Electrotechnical Commission

Draft IEC Recommendations being considered by the U.S. National Committee under the Six Months' Rule. (When IEC circulates proposed recommendations for vote by all national committees of IEC, a national committee not voting within six months is recorded as having voted in the affirmative.)

International Electrotechnical Vocabulary—

Group 50, Electrochemistry and Electrometallurgy. Revision of first edition, 1938.

Group 65, Radiology. Revision of first edition, 1938.

Group 08, Electro-acoustics. Revision of first edition, 1938.

Fundamental Parameters for Printed Wiring Techniques.

Lightning Arresters.

Draft IEC Recommendations being considered by the U.S. National Committee under the Two Months' Rule. (After vote under the Six Months' Rule, comments received are circulated. A national committee not voting on these within two months is recorded as having voted in the affirmative.)

Lateral-Cut Commercial and Transcription Disk Recordings, Recommendations for,

International Organization for Standardization

● Five draft ISO Recommendations on plastics were voted on recently by the American Standards Association as a Member-Body of the International Organization for Standardization and recommended to ISO for approval: Determination of Acetone Soluble Matter of Phenolic Mouldings, Draft ISO Recommendation No. 92; Determination of Apparent Density of Moulding Material Which Can Be Poured from a Funnel, Draft ISO Recommendation No. 93; Determination of Apparent Density of Moulding Material Which Cannot Be Poured from a Funnel, Draft ISO Recommendation No. 94; De-

termination of Water Absorption of Plastics (Conventional Method), Draft ISO Recommendation No. 95; and Test Method on Temperature of Deflection Under Load, Draft ISO Recommendation No. 96.

- Proposals for two new international projects, on cork and fiber building board, are now before interested groups in the USA for their recommendations.

The project on cork was proposed by the Portuguese standards association "in view of the more and more widespread use of cork and the difficulty of finding descriptions which correspond with each other in the various markets."

The work on fiber building board was proposed by the Norwegian standards association because "so far this material has been ordered or delivered according to specifications and has been tested according to methods which differ from one country to another."

- A canvass of industry concerned with textile machinery in the USA is being taken on seven draft ISO Recommendations prepared by ISO Technical Committee 72, Textile Machinery and Accessories. The American Standards Association has been asked to vote as a Member-Body of the International Organization for Standardization on these draft recommendations.

- The American Standards Association is now voting, through the ASA Standards Boards concerned, on whether, as Member-Body of the International Organization for Standardization, it recommends ISO approval of the following draft ISO recommendations:

Seedlac, Shellac, and Bleached Lac (Draft ISO Recommendations 98, 99, and 100)

The American Committee for ISO/TC 50, Lac, is made up of members of Subcommittee XIII on Shellac of ASTM Committee D-1, augmented by governmental and

industrial personnel drawn from interests not represented on the ASTM subcommittee. Dr C.C. Hartman of the National Bureau of Standards serves as its chairman. This committee has recommended that ASA approve these drafts subject to modifications proposed by the committee.

Methods for Grading Muscovite Mica Blocks, Thins, and Condenser Films (Draft ISO Recommendation 115)

Subcommittee IX on Mica Products of ASTM Committee D-9 on Insulating Materials, the American advisory committee for the work of ISO/TC 56, recommended approval of the draft recommendation with editorial modifications.

Quantities and Units of Periodic and Aperiodic Phenomena, (Draft ISO Recommendation 132)

Approval by ASA was recommended by the Review Committee of Sectional Committee Y10 on Letter Symbols, which advises ASA on work with ISO/TC 12.

- Technical Committee 79, Light Metals and Their Alloys of the International Organization for Standardization (ISO), of which AFNOR (France) has the secretariat, met for the second time in Paris from October 15 to 19, 1956.

Fifty-six delegates from 13 different countries (Canada, Czechoslovakia, France, Germany, Italy, the Netherlands, Norway, Poland, Spain, Sweden, Switzerland, the United Kingdom, and the USSR) met in plenary session during the day and in Working Groups during the evenings.

Observers from ISO's Technical Committee on Shipbuilding Details for Sea Navigation, and from the International Electrotechnical Commission were also present.

Unanimous agreement was reached on

- (a) Definition and classification of unalloyed 99.8 magnesium ingots;
- (b) Definition and classification of the composition of magnesium—aluminum—zinc alloy castings;

- (c) Definition and classification of magnesium—aluminum—zinc alloy ingots for foundry purposes;
- (d) Definition and classification of unalloyed aluminum ingots;
- (e) Definition and classification of the compositions of aluminum alloy castings.

An agreement also was reached on wrought aluminum.

Many other studies are under way, principally on terminology, wrought aluminum alloys, tensile test, and hardness tests.

A new subcommittee on methods of chemical analysis is to be organized.

The next meeting of the committee will be in Paris in 1958.

- A USA committee is being organized to handle American participation in the work of ISO Technical Committee 48 on Laboratory Glassware and Related Apparatus. Among the organizations represented are the American Association of School Administrators, American Chemical Society, American Council of Independent Laboratories, American Hospital Association, American Petroleum Institute, American Pharmaceutical Association, American Public Health Association, American Society for Testing Materials, Armed Services Medical Procurement Agency, Canadian Standards Association (liaison), National Bureau of Standards, Scientific Apparatus Makers Association, and the U.S. Public Health Service.

- The American Standards Association has asked participating status in ISO Project ISO/TC 79, Light Metals and Their Alloys, and has designated the American Society for Testing Materials Committee B-7 on Light Metals and Alloys, Cast and Wrought, as advisory group for this international work.

- On recommendation of the American groups concerned, the American Standards Association has voted in favor of initiation of an international project on refrigeration, and has offered to serve as secretariat.

In view of the widespread use of

refrigeration in all parts of the world, it is essential for international trading that there should be coordination of national standards, particularly of terminology and testing techniques, explained the British Standards Institution which proposed the project. As suggested, the program of work would coordi-

nate national standards of terminology and definitions; manufacture and testing of household and commercial refrigerators and food freezers; rating and testing of main components of refrigerating plants, e.g. compressors, condensers, etc; rating and testing of refrigerated air-conditioning units; and safety.

The proposal touches upon the work of a number of ASA projects, including refrigeration safety, B9; piping, B31; household refrigeration, B38; refrigeration on ship-board, B59; expansion valves, B60; flare fittings, B70; air-conditioning symbols, Y32; nomenclature, Y53; and gas refrigeration, Z21.

AMERICAN STANDARDS UNDER WAY

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

In Standards Board

Pickups for Shock and Vibration Measurement, Method for Specifying the Characteristics of, Z24.21/390
Sponsor: Acoustical Society of America

AUTOMOTIVE

American Standard Approved

Inspection Requirements for Motor Vehicles, D7.1-1956 (Revision of D7.1-1941)
Sponsors: American Association of Motor Vehicle Administrators; Association of Casualty & Surety Companies

BUILDING AND CONSTRUCTION

American Standard Published

Fire Tests of Building Construction and Materials, Methods of, ASTM E 119-55; NFPA 251; ASA A2.1-1956 (Revision of ASTM E 119-41; ASA A2.1-1942) \$0.30

Sponsors: National Bureau of Standards; National Fire Protection Association; American Society for Testing Materials

Methods of fire tests applicable to assemblies of masonry units and to composite assemblies of structural materials for buildings, including bearing and other walls and partitions, columns, girders, beams, slabs, and composite slab and beam assemblies for floors and roofs. Also applicable to other assemblies and structural units that constitute permanent integral parts of a finished building. The classifications register performance during the period of exposure.

Structural Rivet Steel, ASTM A 141-55; ASA G21.1-1956 \$0.50
Sponsor: American Society for Testing Materials

Legend—Standards Council—Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.
Board of Review—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.
Standards Board—Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Status as of January 3, 1957

In Board of Review

Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1- (Revision of A62.1-1945)
Sponsors: American Institute of Architects; Associated General Contractors of America; National Association of Home Builders; Producers' Council

Gypsum and Gypsum Products, Methods of Testing (Revision of ASTM C 26-54; ASA A70.1-1956)
Sponsor: American Society for Testing Materials

In Standards Board

Open Web Steel Joist Construction, Specifications for, A87.1 (Revision of A87.1-1955)
Sponsor: Steel Joist Institute

Reaffirmation Being Considered

Basis for the Coordination of Masonry, ASA A62.2-1945
Sponsors: The Producers' Council; the American Institute of Architects; National Association of Home Builders

CONSUMER GOODS

American Standards Approved

Soda Ash, Specifications for, ASTM D 458-55; ASA K60.11-1956 (Revision of ASTM D 458-39; ASA K60.11-1948)

Trisodium Phosphate, Specifications for, ASTM D 538-55; ASA K60.12-1956, (Revision of ASTM D 538-44; ASA K60.12-1948)

Sodium Metasilicate, Specifications for, ASTM D 537-55; ASA K60.18-1956 (Revision of ASTM D 537-41; ASA K60.18-1948)

Methods of Sampling and Chemical Analysis of Alkaline Detergents, ASTM D 501-55; ASA K60.21-1956 (Revision of ASTM D 501-54; ASA K60.21-1955)

Sponsor: American Society for Testing Materials

DRAWINGS AND SYMBOLS

Reaffirmation Being Considered

Graphical Symbols for Heat-Power Apparatus, ASA Z32.2.6-1950
Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

ELECTRIC AND ELECTRONIC

American Standard Published

Cotton Braid for Insulated Wire and Cable for General Purposes, Specifications for, ASA C8.12-1956 (Revision of ASA C8.12-1942) \$0.75
Sponsor: Electrical Standards Board

American Standards Approved

Color Coding for Numerical Values of Components for Electronic Equipment, RETMA GEN-101-A; ASA C83.1-1956 (Revision of RETMA GEN-101; ASA C83.1-1949)

Nomenclature and Dimensions for Panel Mounting Racks, Panels, and Associated Equipment, RETMA SE-102; ASA C83.9-1956

Rectangular Waveguides, Requirements for, RETMA TR-108-A; ASA C83.10-1956

Metal-Encased Fixed Paper Dielectric Capacitors for D-C Application, Requirements for, RETMA TR-113-A; ASA C83.11-1956

Cable Connectors for Audio Facilities for Radio Broadcasting, Requirements for, RETMA TR-118; ASA C83.12-1956

Wire-Wound Power-Type Rheostats, Requirements for, RETMA TR-133; ASA C83.13-1956

Rigid Coaxial Transmission Lines — 50 Ohms, Requirements for, RETMA TR-134; ASA C83.14-1956

Electrolytic Capacitors (For Use Primarily in Transmitters and Electronic Instruments) Requirements for, RETMA TR-140; ASA C83.15-1956

Sponsor: Radio-Electronics-Television Manufacturers Association

In Board of Review

Safety for Rubber-Covered Wires and Cables, UL April 1956; ASA C33.6
Sponsor: Underwriters' Laboratories

In Standards Board

Measurement of Gain, Amplification, Loss, Attenuation and Amplitude-Frequency-Response, Methods of, 56 IRE 3.S1; ASA C16.29

Sponsor: Institute of Radio Engineers
Electrical Terms, Definitions of, (Partial revision of C42-1941); Group 35, Transmission and Distribution, C42.35; Group 65, Communications, C42.65; Group 80, Electrobiography Including Electrotherapeutics, C42.80

Sponsor: American Institute of Electrical Engineers

Overhead-Type Distribution Transformers—67,000 Volts and Below, 500 Kva and Smaller, Requirements for, C57.12c (as Section 20 of ASA C57.12-1956)

Sponsor: Electrical Standards Board
Lightning Arresters for A-C Power Circuits, C62.1- (Revision of C62.1-1944)

Sponsor: American Institute of Electrical Engineers

GAS-BURNING APPLIANCES

American Standards Published

Gas Water Heaters, Approval Requirements for, ASA Z21.10-1956 (Revision of Z21.10-1953, and Addenda Z21.10a-1954 and Z21.10b-1955)

\$2.00

Central Heating Gas Appliances, Volume II, Gravity and Forced-Air Central Furnaces, Approval Requirements for, Z21.13.2-1956 (Revision of ASA Z21.13.2-1955)

\$2.00

Domestic Gas Appliance Pressure Regulators, Listing Requirements for, Z21.18-1956 (Revision of ASA Z21.18-1955)

\$1.50

Sponsor: American Gas Association

MATERIALS AND TESTING

In Standards Board

Alloy Designation System for Wrought Aluminum

Submitted by: Aluminum Association

MECHANICAL

American Standards Published

Oblong Oil Cans, Requirements for, B64.3-1954

\$0.35

Conveyor Terms and Definitions, B75.1-1956

\$1.00

Sponsor: Conveyor Equipment Manufacturers Association

American Standard Approved

Gray Iron Castings, Specifications for, ASTM A48-56; ASA G25.1-1956 (Revision of ASTM A48-48; ASA G25.1-1948)

Sponsor: American Society for Testing Materials

Standard Submitted

Carbide Blanks and Cutting Tools, Standard Sizes, Styles and Designations of Solid Sintered Carbide Inserts and Their Holders—Throw-Away Type
Submitted by: Cemented Carbide Producers Association

Withdrawal Being Considered

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, ASTM A 215-44; ASA G51.1-1944

Sponsor: American Society for Testing Materials

NUCLEAR ENERGY

In Standards Board

Glossary of Terms in Nuclear Science and Technology, N1

Submitted by: National Research Council

PETROLEUM PRODUCTS AND LUBRICANTS

American Standards Approved

Viscosity by Means of the Saybolt Viscosimeter, Test for, ASTM D 88-56; ASA Z11.2-1956 (Revision of ASTM D 88-53; ASA Z11.2-1953)

Flash and Fire Points by Means of Cleveland Open Cup, Test for, ASTM D 92-56; ASA Z11.6-1956 (Revision of ASTM D 92-52; ASA Z11.6-1952)

Water in Petroleum Products and Other Bituminous Materials, Test for, ASTM D 95-56T; ASA Z11.9-1956 (Revision of ASTM D 95-46; ASA Z11.9-1947)

Distillation of Gasoline, Naptha, Kerosine, and Similar Petroleum Products, Test for, ASTM D 86-56; ASA Z11.10-1956 (Revision of ASTM D 86-54; ASA Z11.10-1955)

Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for, ASTM D 94-56T; ASA Z11.20-1956 (Revision of ASTM D 94-55; ASA Z11.20-1955)

Copper Corrosion by Petroleum Products, Test for, ASTM D 130-56; ASA Z11.21-1956 (Revision of ASTM D 130-30; ASA Z11.21-1930)

Flashpoint by Tag Closed Tester, Test for, ASTM D 56-56; ASA Z11.24-1956 (Revision of ASTM D 56-52; ASA Z11.24-1952)

Knock Characteristics of Motor Fuels by the Motor Method, Test for, ASTM D 357-56; ASA Z11.37-1956 (Revision of ASTM D 357-53; ASA Z11.37-1953)

Vapor Pressure of Petroleum Products (Reid Method), Test for, ASTM D 323-56; ASA Z11.44-1956 (Revision of ASTM D 323-55; ASA Z11.44-1955)

Oil Content of Petroleum Waxes, Method of Test for, ASTM D 721-56T; ASA Z11.52-1956 (Revision of ASTM D 721-55; ASA Z11.52-1955)

Knock Characteristics of Motor Fuels by the Research Method, Test for, ASTM D 908-56; ASA Z11.69-1956 (Revision of ASTM D 908-55; ASA Z11.69-1955)

Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates, Method of Test for, ASTM D 1019-56T; ASA Z11.71-1956 (Revision of ASTM D 1019-55T; ASA Z11.71-1955)

ASTM-IP Petroleum Measurement Tables, ASTM D 1250-56; ASA Z11.83-1956 (Revision of ASTM D 1250-55; ASA Z11.83-1955)

Evaporation Loss of Lubricating Greases and Oils, Test for, ASTM D 972-56; ASA Z11.93-1956

Sponsor: American Society for Testing Materials

In Standards Board

Selected Values of Physical and Thermodynamic Properties of Hydrocarbons and Related Compounds, Z78.1

Sponsor: American Petroleum Institute

Standard Reaffirmed

Tetraethyllead in Gasoline, Test for, ASTM D 526-56; ASA Z11.48

PHOTOGRAPHY

American Standards Published

Determining the Activity or the Relative Photographic Effectiveness of Illuminants, Method for, ASA PH2.3-1956 (Revision of PH2.3-1953)

\$0.50

Sponsor: Photographic Standards Board

Provides methods for determining the activity, or photographic effectiveness, of illuminants used with continuous-tone black-and-white negative photographic materials, relative to that of the light source in terms of which the International Unit of Photographic Intensity is defined. The standard applies only to the materials to which the American Standard Method for Determining Photographic Speed and Exposure Index, PH2.5-1954, or the latest revision thereof, is applicable.

Dimensions for 35mm Motion-Picture Negative Raw Stock, Dimensions for, PH 22.34-1956 (Revision of Z22.34-1949)

\$0.25

Sponsor: Society of Motion Picture and Television Engineers

Gives dimensions and tolerances after cutting and perforating 35mm motion-picture negative raw stock.

Dimensions for 35mm Motion-Picture Film, Alternate Standard for Positive Raw Stock, Dimensions for, PH22.102-1956

\$0.25

Gives dimensions and tolerances after cutting and perforating 35mm motion-picture positive raw stock.

Sponsors: Society of Motion Picture and Television Engineers

American Standards Approved

Amateur Roll Film, Backing Paper, and Film Spools, Dimensions for, PH1.21-1956 (Revision of Z38.1.7-1950)

Covers amateur roll films in most common use for hand-held still picture cameras, specifically, those roll films which comprise a length of sensitized film attached to a continuous strip of backing paper, both film and paper being wound upon a flanged spool so as to constitute a daylight-loading unit. Dimensions and tolerances are given for the film, backing paper and spools covered.

Photographic Dry Plates (Inch and Centimeter Sizes), Dimensions for, PH1.23-1956 (Revision of Z38.1.30-1951 and Z38.1.31-1944)

Gives dimensions and tolerances for photographic dry plates in both inch and centimeter sizes. Requirements for squareness are also covered.

Film Packs, Dimensions for, PH1.26-1956 (Revision of Z38.1.1-1951)

Gives dimensions and tolerances for film packs.

Spooling Photographic Paper for Recording Instruments, Requirements for, PH1.27-1956.

Sponsor: Photographic Standards Board

Specifies certain physical properties of rolls of silver halide sensitized photographic paper to be used in any type of recording equipment.

Evaluating Films for Monitoring X-rays and Gamma Rays Having Energies up to 2 Million Electron Volts, Method for, PH2.10-1956

Sponsor: Photographic Standards Board

Provides methods for determining reproducible high and low reference exposures which are intended to assist the user in determining the useful range of film for radiation monitoring. Sensitometric procedures are described for films exposed to X-rays and Gamma rays from radioactive substances. Recommended sensitometric procedures are also given for combinations of films and absorbers or intensifying screens where these arrangements are used for radiation monitoring.

Melting Point of a Nonsupport Layer of Films, Plates, and Papers in Distilled Water, Method for Determining, PH4.11-1956 (Revision of Z38.8.20-1948)
Establishes the test method for determining the temperature at which a photographic emulsion or other nonsupport layer of films, plate or paper starts to melt in a rising-temperature distilled water bath.

Photographic Grade Mono-Methyl-Para-Aminophenol Sulphate, Specifications for, PH4.125-1956 (Revision of Z38.8.125-1948)

2,4-Diaminophenol Hydrochloride, Specifications for, PH4.127-1956 (Revision of Z38.8.127-1948)

Para-Hydroxyphenylglycine, Specifications for, PH4.128-1956 (Revision of Z38.8.128-1949)

Para-Aminophenol Hydrochloride, Specifications for, PH4.129-1956 (Revision of Z38.8.129-1948)

Pyrogallol Acid, Specifications for, PH4.130-1956 (Revision of Z38.8.130-1948)

Para-Phenylenediamine, Specifications for, PH4.132-1956 (Revision of Z38.8.132-1948)

Para-Phenylenediamine Dihydrochloride, Specifications for, PH4.133-1956 (Revision of Z38.8.133-1948)

Chlorohydroquinone, Specifications for, PH4.134-1956 (Revision of Z38.8.134-1948)

Sodium Thiocyanate, Specifications for, PH4.177-1956

Potassium Chloride, Specifications for, PH4.202-1956 (Revision of Z38.8.202-1948)

Sodium Chloride, Specifications for, PH4.203-1956 (Revision of Z38.8.203-1948)

5-Methylbenzotriazole, Specifications for, PH4.205-1956 (Revision of Z38.8.205-1948)

6-Nitrobenzimidazole Nitrate, Specifications for, PH4.206-1956 (Revision of Z38.8.206-1948)

Sodium Hydroxide, Specifications for, PH4.225-1956 (Revision of Z38.8.225-1948)

Potassium Hydroxide, Specifications for, PH4.226-1956 (Revision of Z38.8.226-1948)

Potassium Carbonate, Specifications for, PH4.229-1956 (Revision of Z38.8.229-1948)

Ammonium Hydroxide, Specifications for, PH4.232-1956 (Revision of Z38.8.232-1948)

Requirements are given for the physical and chemical properties of the indicated chemical to insure its satisfactory use for photographic processing purposes.

Sponsor: Photographic Standards Board

PIPE AND FITTINGS

Standard Submitted

Stainless Steel Pipe, B36.19- (Revision of ASA B36.19-1952)

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

SAFETY

American Standard Published

Portable Metal Ladders, Safety Code for, A14.2-1956 \$0.50

General requirements, specifications and methods of test for lightweight portable metal ladders such as: rung ladders, step ladders, and trestle ladders. Also includes section on care and use of these ladders.

Sponsors: American Ladder Institute; American Society of Safety Engineers; National Association of Mutual Casualty Companies

American Standard Approved

Protective Lighting, Practice for, A85.1-1956 (Revision of American War Standard A85-1942)

Sponsor: Illuminating Engineering Society

In Board of Review

Acceptable Concentration of Carbon Tetrachloride, Z37.17

Maximum acceptable concentration of carbon tetrachloride for industrial exposures of workmen, not to exceed a total of 8 hours daily. Includes brief discussion of toxic properties, sampling procedures, analytical methods. Includes a bibliography of technical literature on this hazard.

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Ball and Roller Bearings, B3—

Sponsor: Mechanical Standards Board

Proposed changes in Military Standards and Federal Specifications relating to ball and roller bearings are being submitted to Sectional Committee B3 for comment and criticism. The first two proposals are already before the committee for discussion.

One of these is a proposed revision of MIL STD 102A on radial clearances of ball bearings. This will be discussed by the committee at its next meeting early this year. Comments will be forwarded to the Bureau of Ships as the agency in charge

of this phase of the military standardization work.

The other is the third draft of proposed Military Standards for washers, keys, and nuts for ball and roller bearing housings, and proposed Federal Specifications on the same subject. The U.S. Naval Gun Factory is the military agency in charge.

Transmission Chains and Sprocket Teeth, B29—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

The scope of this project has been

broadened by omission of reference to "sprocket teeth of the roller, the inverted tooth (silent) and the detachable-link types." The revised scope reads:

"Standardization of power transmission chains, conveying chains, and sprockets."

The committee now plans to undertake a project on offset side bar chains.

Gage Blanks, B47—

The Commodity Standards Division of the U.S. Department of Commerce, upon recommendation by the American Gage Design Committee, submitted for approval as

American Standard a revision of the Commercial Standard 8-41, Gage Blanks. The new edition, Gage Blanks, CS 8-51, with 1955 Supplement, has been approved as American Standard B47.1-1956. The new edition brings the standard up to date with new developments and current practice.

Transformers, C57—

Sponsor: Electrical Standards Board

Since publication of American Standard Distribution, Power, and Regulating Transformers and Reactors (other than current-limiting transformers), C57.12-1956, a new Section 30 has been published as a Proposed American Standard. This section offers requirements for three-phase load-tap-changing transformers, 67,000 volts and below, 1,000 kva through 10,000 kva. As the committee explains: "The subcommittee which prepared this standard carefully analyzed the need for standardizing this particular apparatus and the requirements surrounding it. It has used the desirable features and has eliminated frills in order to arrive at a practical load-tap-changing transformer standard embodying realistic economy for the user."

The proposed requirements are in two parts. Part I covers basic standard electrical characteristics and mechanical features; Part II covers other characteristics and features which may be required for some applications.

After study and trial for approximately one year, suggestions for improvement will be considered and a revised edition will be submitted for approval as American Standard. When approved, the standard will be incorporated into American Standard C57.12-1956.

Electric Lamps, C78—

Sponsor: Electrical Standards Board

A new designation system for mercury lamps to aid interchangeability, and to help in manufacturing, in ordering, and in maintaining inventory is being considered by Sectional Committee C78 on Stand-

ards for Electric Lamps and C82 on Lamp Ballasts. Subcommittees of these two committees have already voted to recommend that ASA undertake administration of a designation system to identify standard lamp types and sizes. The designation system for photo lamps as covered by American Standard C78.370-1956 has been administered by ASA for two years and has been so successful that suggestions have been received that the system be broadened and used on a worldwide basis as well as nationally. The committee is considering the possibility of such a development.

Wood Poles, O5—

Sponsor: Telephone Group

The American Standard Specifications and Dimensions for Wood Poles, O5.1-1948, need revision, the committee decided at its meeting November 27, 1956. After completion of the Pole Research Project (Break Tests) by the American Society for Testing Materials, subcommittees will be set up to start work on a revision. The ASTM research is expected to give data for possible revision of the standard fiber stresses. Other questions will be considered concerning limitations on knot sizes and on their location, grain requirements, shaving in the tops of poles, and classifying poles on a specific gravity basis.

Office Standards, X2—

Sponsor: National Office Management Association

Word from Washington is that the General Services Administration plans to make use of the new American Standard Specification for Ring, Memo, and Post Binder Sheet Sizes and Ring and Post Data, X2.4.3-1956. It is planned to make the standard the basis for a Federal Standard on binders.

Nuclear Energy—

Sponsors have accepted responsibility for three of the new American Standard projects on nuclear energy and they are now ready to proceed with organization of the committees. The Atomic Industrial Forum is

sponsor for project N2, General and Administrative Standards for Nuclear Energy; the Atomic Industrial Forum and the National Safety Council are sponsoring N7 on Radiation Protection; and the American Institute of Chemical Engineers is sponsor of N5 on Chemical Engineering for the Nuclear Field.

Nuclear Energy, International Project—

At its meeting November 28, the Nuclear Standards Board voted to recommend that the American Standards Association not only participate in the International Organization for Standardization's project on nuclear energy but also offer to serve as secretariat. The ISO project has been organized as Technical Committee 85.

ISO now has before it for consideration an offer from both the American Standards Association and the British Standards Institution to serve as secretariat. This question will be presented to the ISO Council for decision.

Recently the International Organization for Standardization and the International Electrotechnical Commission sent coordinated statements to the United Nations informing the UN of their intention to start a program of standardization in the field of nuclear energy. The principal subjects planned for consideration are terminology, definitions, and symbols; protection of persons against hazards from nuclear radiation; safe and effective operation of reactors; special considerations in specifications for normal engineering materials and for engineering equipment subject to exposure to nuclear flux; special instrumentation for control of processes and procedures, such as electrical measuring instruments for nuclear reactors, electrical components of servo-mechanisms, and electrical measuring instruments employed in the use of radio isotopes; and materials for nuclear energy, including methods of test for impurities, sampling of ores, and chemical engineering.

Marking of Metals for Identification—

A general conference December 17 decided not to recommend a standardization project on marking of metals. The Company Member Conference had asked that the American Standards Association organize a sectional committee to develop an American Standard. However, the representatives attending the conference were of the opinion that too many technical problems are still unsolved and the technology of marking metals has not yet developed to the point where a standard can be written.

Coordination of Definitions—

To make sure that definitions for the same technical terms do not differ from one American Standard to another, a new procedure is now being followed by sectional committees working on electrical standards.

The Sectional Committee on Definitions of Electrical Terms, C42, is charged with responsibility for ensuring that definitions in the electrical field are uniform.

The C42 committee, sponsored by the American Institute of Electrical Engineers, has already submitted a revision of several sections of the American Standard Definitions of Electrical Terms, C42-1941, and is completing a revision of the remainder. The committee plans to stay active in order to keep the standard definitions up to date.

All other electrical standards committees have been asked to use the definitions given in American Standard C42, whenever the standard definition is satisfactory. If a more specific meaning is required, a note may be added. If the committee believes the definition needs revision, the preferred wording, with an explanation of the reasons for the proposed change, is to be submitted to Sectional Committee C42.

A guide for the formulation of definitions for electrical terms has been issued for use in preparing new definitions.



Standards Outlook

by LEO B. MOORE

Standards Films—

Almost coincident with the advance of national standards, there has occurred in this country the great growth of films and the film industry. We have become a nation of film viewers—still and movie—for pleasure and information. Although film has obvious virtues in communication, its use to combat communication problems in standards activity has hardly been tapped.

In this country where the film industry is of such magnitude, it might be considered amazing that so few films are devoted to standards. However, this observation may be made of industrial films generally, since professional producers feel that a film must involve a considerable investment of time and money lest it suffer in comparison to entertainment film. The few films on standards presently available are in this class and would represent a sizeable investment for any company program.

The technical development of camera and projection equipment for home use has tended to minimize the difference between the output of the amateur and the professional and has made company-produced films feasible. Even the more effective color film has come within the financial and technical abilities of individuals and companies.

Despite this progress, films for industrial use have never been adequately exploited. Company films have been made for training and sales endeavors and for industrial engineering as reporting and recording devices in the form of before-and-after shots and these pictures have had some favorable response. Generally, however, the cost of time and money has not been the only deterrent. Silent films with their printed titles did not have the true-to-life impact of sound and voice no matter how well they were made.

The obvious need for effective industrial films has been the ability to add sound and commentary to the homemade film. This has now been accomplished by the development of techniques for striping film. The movie is made and edited in the usual fashion and then edged with magnetic oxide similar to the coating on magnetic tape. Using a special projector designed to handle striped film, any sound or commentary may be imparted to the film to suit the intended audience and may be changed at will. This development has now opened up the use of films to every industrial program, not the least of which should be standardization.

This means that every standards department may now have films that show not only the before and after of standards effort, but the whole standards process with personalities as well as problems in an interesting sound and picture record. The commentary may be specially designed for the most effective presentation to management, design engineer, draftsman, and on and on.

And here you will find that a picture is really worth a thousand words.

Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

the problem

As the outer abrasive layer of a grinding wheel becomes dull from grinding, the dull grains must break free, to expose new cutting edges. Strength of wheels is, therefore, limited, and wheels may break at high speeds and under severe service conditions. Effective methods to protect personnel and equipment are needed to prevent injuries and serious damage.

the solution

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Prepared by ASA Sectional Committee B7, sponsored by the International Association of Governmental Labor Officials and the Grinding Wheel Institute.

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**PART II OF NO. 1 IS THE INDEX FOR THE PREVIOUS
VOLUME--NO NEED TO BE REPLACED IN THIS VOLUME.**